



**CO L O R A D O**

**Department of Public  
Health & Environment**

## **Colorado Immunization Information System**

**HL7 Version 2.3.1 Implementation Guide**

**Version 1.6**

*Last Updated February 2015*

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## Change History

Published/Revised Date	Version #	Author	Section/Revision Description
6/22/2010	1.0	CIIS	Draft for initial implementation
7/22/2010	1.1	CIIS	Add explanation of client status PD1-16
7/30/2010	1.1a	CIIS	Correct discrepancies for required fields
8/16/2010	1.1b	CIIS	Additions to Field Locations table
10/1/2010	1.1c	CIIS	Updates to Vocabulary 16 CVX - Vaccines Administered Table
12/09/2010	1.1d	CIIS	Allow ORC-13 as alternate field for Administered at location. Update CVX Code Requirement.
2/8/2011	1.1e	CIIS	Update to and add NDC mapping link to Vocabulary 16 CVX – Vaccines Administered Table.
3/7/2011	1.2	CIIS	Update to Business Rules. Add examples of VXQ, VXR and VXX messages.
4/15/2011	1.2a	CIIS	Changed nomenclature of required field values. Update to Field Locations table.
8/19/2011	1.2b	CIIS	Corrections to required fields.
11/10/2011	1.2c	CIIS	Added Vocabulary 23 - Language Table.
12/20/2011	1.2d	CIIS	Updates to Vocabulary 16 CVX – Vaccines Administered Table
7/5/2012	1.2e	CIIS	Added new VXU (Unsolicited Vaccination Record Update) examples. Changed County, Insurance Type and Vaccine Funding Source fields from "Optional" to "Required but May be Empty." Clarified CIIS-specific standards. Added a new section highlighting common problem segments. Updated several Vocabulary Tables. Added a Vaccine Funding Source Vocabulary Table and an Observation Identifiers Vocabulary Table.
11/6/2012	1.2e	CIIS	Updates to CVX and MVX Vocabulary tables.
4/23/2013	1.2.e	CIIS	Updates to CVX Vocabulary table.
5/13/2013	1.2e	CIIS	Updates to CVX and MVX Vocabulary tables.
7/18/2013	1.2f	CIIS	Updates to CIIS Specific Standards – Vaccination Action Code.
9/30/2013	1.2g	CIIS	Updates to CIIS Specific Standards – Vaccination Completion Code; Add Filler Order to Field Locations section
12/6/2013	1.2h	CIIS	Add PO – Oral to Vocabulary 6 – Administrative Site
4/10/2014	1.2i	CIIS	NK1 no longer a strict requirement for patients under 19
6/28/2014	1.2j	CIIS	Modify OBX required fields; Added example for VIS date submission for combination vaccination
9/3/2014	1.3	CIIS	Updates to CVX and MVX Vocabulary tables.
11/5/2014	1.4	CIIS	Updates to CVX and MVX Vocabulary tables.
12/30/2014	1.5	CIIS	Updates to CVX Vocabulary table.
2/2/2015	1/6	CIIS	Updates to CVX Vocabulary table.

## INTRODUCTION

The Colorado Immunization Information System (CIIS) currently has the capability to receive and process electronic information in the following Health Level Seven (HL7) formats:

- Real-time messages and batch files formatted in HL7 Version 2.3.1
- Batch files formatted in HL7 Version 2.5.1

***This implementation guide only addresses HL7 Version 2.3.1.*** As CIIS develops the capacity to handle real-time HL7 v.2.5.1 messages, details about message replacements and specifications will be included in a separate CIIS HL7 Version 2.5.1 Implementation Guide (now under development). Through its real-time HL7 messaging portal, CIIS accepts VXU (Unsolicited Vaccination Updates) and VXQ (Query for Vaccination Record) messages. Through HL7 batch file transfers, CIIS accepts VXU messages from immunization providers and other organizations which pay healthcare providers to administer vaccines to Coloradans. The HL7 VXU interface allows providers to use their existing Electronic Health Record (EHR) systems to submit immunization data for their patients via either real-time messages or batch file transfers rather than manually inputting data directly into the CIIS web application. This enhanced data interface should improve overall data quality while also reducing the double-data entry burden placed on practices participating in CIIS.

This HL7 implementation guide describes the content and message mapping specifications for the set of data elements utilized to communicate information that meets the requirements for immunization reporting to the Colorado Department of Public Health and Environment (CDPHE). This version adopts the Centers for Disease Control and Prevention's (CDC) *Implementation Guide for Immunization Data Transactions Version 2.2*. The intended audiences for this document are healthcare providers, EHR vendors and other public health-related organizations interested in using HL7 for transmitting their data to Colorado's immunization registry.

Additional information and relevant resources are available at the following websites:

Centers for Disease Control and Prevention (CDC):

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

American Immunization Registry Association (AIRA):

[http://www.immregistries.org/docs/IIS\\_Data\\_Codebook\\_072808.xls](http://www.immregistries.org/docs/IIS_Data_Codebook_072808.xls)

Colorado Immunization Information System (CIIS):

<http://www.ColoradoIIS.com>

Health Level 7 International (HL7):

<http://www.hl7.org/>

## **BUSINESS RULES**

When defining HL7 interfaces, the general approach has been to consider CIIS as a repository of information. The idea is for provider systems to submit real-time requests for information from CIIS or to send messages (either real-time or batch) that contain updates to client records held within CIIS. There are three primary scenarios of data exchange:

- CIIS receives a real-time query and responds with the results of the query via real-time messaging.
- CIIS receives a real-time update message and responds with an acknowledgement indicating success or failure for updating a record in the registry via real-time messaging.
- CIIS receives an HL7 batch file containing multiple update messages (NOTE: No acknowledgment is sent to providers sending batch files from their EHRs).

At this time, CIIS does not initiate the exchange of information with other systems. CIIS currently only responds to messages submitted to it.

There are several common interactions that will occur between provider systems and CIIS. The following sections describe these exchanges in terms of the messages that are transmitted between systems and how CIIS will handle incoming HL7 messages.

### ***Update a Patient's Vaccination Record in CIIS***

The quality of the immunization information contained in CIIS depends on participating healthcare providers and their timeliness and accuracy in reporting their patients' immunization data to CIIS.

Participating healthcare providers desiring to submit vaccination information to CIIS will use the VXU message format. The VXU message format can be found on page 5 of this guide and should be utilized for submitting either real-time or batch VXU messages to CIIS. CIIS will respond to a real-time VXU message with an ACK (General Acknowledgement) message indicating the success or failure of the update. If there is an issue processing the real-time VXU message, the ACK message will include the applicable error details.

### ***Parsing Messages***

The HL7 interfaces defined for CIIS are based on version 2.3.1 of the HL7 standards protocol. Systems submitting a properly formatted HL7 message can expect CIIS to accept and parse the message. For real-time HL7 messaging, significant deviations from the message definitions (e.g., no first name, no last name, no date of birth, etc.) that prevent CIIS from being able to process the most important data in a message will result in an ACK error message returned to the sender. For HL7 batch file processing, significant errors in the VXU messages will prevent the update from being made to the patient's record in CIIS.

In some cases, a properly formatted real-time message may still result in an ACK message with the appropriate warning or error being returned (e.g., the message indicates an unsupported message type).

### ***Manual Interventions***

Provider systems utilizing the real-time HL7 messaging gateway will need to establish some type of manual user intervention in response to ACK messages containing error segments sent

from CIIS. It will be the provider system's responsibility to correct and re-send the VXU message to CIIS.

## COMMON HL7 MESSAGE TYPES

### ***VXU – Unsolicited Vaccination Record Update (Real-Time Messaging AND Batch Files)***

The HL7 VXU message is used for sending unsolicited client data and immunizations. When a provider using one system wishes to update the patient's vaccination record held in another system, he or she will transmit an unsolicited update of the record.

MSH	Message Header Segment
PID	Patient Identification Segment
[PD1]	Additional Demographics
[{NK1}]	Next of Kin/Associated Parties
[PV1	Patient Visit
[ {IN1	Insurance
}]	
RXA	Pharmacy Administration
[RXR]	Pharmacy Route
[ {OBX	Observation/Result
[ {NTE}]	Notes (Regarding Immunization)
}]	

Given the definition of the VXU message, it is possible to construct a properly formatted message that contains information regarding a patient but does not contain any record of vaccines having been administered to the patient. If CIIS receives this type of message, one of two scenarios will apply:

- If the patient already exists in CIIS, demographic information in the VXU message will be used to update the client's CIIS record.
- If the patient does not exist in CIIS, demographic information in the VXU message will be used to create a new client record in CIIS.

When a matching patient record is found, CIIS will then review the data included in the VXU message.

- Patient demographic data in the message (including name, date of birth, etc.) will be used to update the relevant fields in CIIS.
- If the vaccination in the message already exists in the registry, CIIS will update the applicable fields with the data supplied in the VXU message.
- If the vaccination does not exist in the registry, CIIS will add the vaccination to the patient's record.
- If the vaccination has an administration date before the patient's date of birth, the vaccination will not be added to CIIS.
- If CIIS already has a vaccination on the same date within the same vaccine group, an algorithm will be used to determine if the incoming data will override the existing data (e.g., data from a provider will supersede data from a health maintenance organization/insurance plan).

### ***VXQ – Query for Vaccination Record (Real-Time Messaging Only)***

When a healthcare provider participating in CIIS needs to obtain a complete patient vaccination record, he or she will send a query to CIIS for the patient's immunization record.

MSH	Message Header Segment
QRD	Query Definition Segment
[QRF]	Query Filter Segment

### ***VXR – Response to Vaccination Query Returning Vaccination Record (Real-Time Messaging Only)***

When the patient has been uniquely identified (there is only one match to the query in the registry), CIIS will send a response to the query following this format:

MSH	Message Header Segment
MSA	Message Acknowledgment Segment
QRD	Query Definition Segment
[QRF]	Query Filter Segment
PID	Patient Identification Segment
[PD1]	Additional Demographics
[ {NK1} ]	Next of Kin/Associated Parties
[PV1	Patient Visit
[PV2] ]	Patient Visit Additional Information
[ {IN1	Insurance
[IN2]	Insurance Additional Information
[IN3]	Insurance Additional Information-Cert.
}]	
[ { [ORC]	Common Order Segment
RXA	Pharmacy Administration
[ RXR]	Pharmacy Route
[ { OBX	Observation/Result
[ {NTE} ]	Notes (Regarding Immunization)
}]	
}]	

### ***VXX – Response to Vaccination Query Returning Multiple PID Matches (Real-Time Messaging Only)***

If the vaccination query results in multiple matches (more than one patient record matches the identifiers in the query so that there is no unique identification), CIIS will send a response to the query following this format:

MSH	Message Header Segment
MSA	Message Acknowledgment Segment
QRD	Query Definition Segment
[QRF]	Query Filter Segment
{ PID	Patient Identification Segment
[ {NK1} ]	Next of Kin Segment
}	

### ***ADT – Patient Administration Update (Real-Time Messaging Only)***

The HL7 standard defines many specialized ADT messages for administrative events involving patients (e.g., admit, discharge, transfer, merge record, etc.). Some providers may decide to

use the ADT message when there is no immunization information for the patient, especially if their system has already implemented the ADT but not the VXU message. In addition, the ADT message can be used to populate CIIS with data from systems that do not contain immunization data or that cannot produce immunization messages.

MSH            Message Header Segment  
 PID            Patient Identification Segment  
 [{NK1}]        Next of Kin/Associated Parties  
 [{OBX}]        Observation/Result

**ACK – General Acknowledgement (Real-Time Messaging Only)**

The ACK message is used in response to nearly any real-time message received by CIIS where a significant error has been encountered. In general, CIIS will make every attempt to adequately process each message it receives and to overlook small, insignificant issues. The goal is exchange data and not to “police” the format of incoming messages.

However, there are some circumstances when CIIS will be unable to process the incoming real-time message (e.g., no first name, no last name, no date of birth, etc.). In this case, an ACK message will be generated.

MSH            Message Header Segment  
 MSA            Message Acknowledgement  
 [ERR]          Error

**HL7 SEGMENT DEFINITIONS**

Each HL7 segment consists of several fields that are separated by a pipe "|", which is the field separator character. A definition table is included in this document for each segment that might appear in a batch file of vaccination updates. These definition tables specify how each segment is structured and contain the following columns:

<b>Sequence</b>	The ordinal position of the field in the message segment. These are not always consecutive since CIIS does not use every field in the HL7 standard.
<b>Type</b>	HL7 data type of the field. See <i>Appendix A</i> for the definitions of HL7 data types.
<b>Length</b>	Maximum length of the field for CIIS.
<b>Required</b>	Required (R), Required But May Be Empty (RE), Optional (O)
<b>Element Name</b>	Name of Field
<b>Description</b>	Description of field, including lookup reference when applicable.

Each segment must be terminated by a carriage return. This carriage return is needed so that the HL7 messages are readable and printable, although the messages may appear somewhat cryptic due to the scarcity of white space.

## **Required Fields**

There are three different requirement types for HL7 segments. Please pay particular attention to the definitions below:

**Required (R)** – The sending application shall populate all R data elements with a non-empty value.

Examples: Patient's First Name, Patient's Last Name, Patient's Date of Birth

**Required, But May Be Empty (RE)** – The sending application shall populate all RE data elements if there is relevant data in those fields.

Examples: Email Address, Phone Number, Ethnicity

**Optional (O)** – The sending application has the option to provide or not provide the optional data elements.

Examples: Medicaid ID, Mother's Maiden Name

## **HL7 Data Types**

Each field has an HL7 data type. *Appendix A* of this document lists and defines the HL7 data types used by CIIS. The elemental data types *Numeric (NM)* and *String (ST)* consist of one value. Some data types, such as *Extended Person Name (XPN)*, *Extended Address (XAD)* and *Extended Composite ID Number and Name (XCN)* are composites.

## **VXU MESSAGE SEGMENTS**

The HL7 VXU message is used for sending unsolicited client data and immunizations. The following sections define each segment type that can appear in a VXU message, along with specific notes about the fields contained within each segment.

### ***Unsolicited Vaccination Record Update (VXU)***

Definition: When a provider using one system wishes to update the patient's vaccination record held in another system, he or she will transmit an unsolicited update of the record (a V04 trigger event).

An unsolicited update will follow this format:

VXU Unsolicited Vaccination Update HL7 –

MSH Message Header Segment  
PID Patient Identification Segment  
[PD1] Additional Demographics  
[{{NK1}}] Next of Kin/Associated Parties  
[PV1 Patient Visit  
[PV2] ] Patient Visit Additional Information  
[ {IN1 Insurance  
[IN2] Insurance Additional Information  
[IN3] Insurance Additional Information-Cert.  
} ]  
[ { [ORC] Common Order Segment  
RXA Pharmacy Administration  
[RXR] Pharmacy Route

```
[ { OBX Observation/Result
[ {NTE} ] Notes (Regarding Immunization)
}]
}]
```

**VXU Example #1 (Message with only the required fields valued)**

The example below of an unsolicited update of a vaccination record demonstrates a message with only the minimum number of required fields valued. This message provides all the National Immunization Program-required core data elements as well as the fields required by HL7 to form a correct, acceptable message.

```
MSH|^~\&|ExampleEHR|ABC Clinic|CIIS|CDPHE|||VXU^V04|20090521CO50|P|2.3.1|<CR>
PID|||CO900009^DHN||KENNEDY^JOHN^FITZGERALD^JR|BOUVIER^M^M|19900607|M|||123 MAIN
ST^APT 3B^LEXINGTON^MA^00210^M^MSACODE^MA034|<CR>
NK1|1|KENNEDY^JACQUELINE^LEE|MTH^MOTHER^HL70063|<CR>
PV1||R|||||||||A|||V02^19900607|<CR>
RXA|0|1|19900607|19900607|08^HEPB^PEDIATRIC/ADOLESCENT^CVX|.5|ML^ISO+||00^NEW IMMUNIZATION
RECORD^NIP001|1234567891^O^BRIAN^ROBERT^A^DR^MD^OEI|^ABC
Clinic|||MRK12345||MSD^MERCK^MVX|||CP|A|<CR>
RXR|SC^SUBCUTANEOUS^HL70162|LA^LEFT ARM^HL70163|<CR>
```

**VXU Example #2 (Unsolicited update showing use of optional segments)**

The example below of an unsolicited update of a vaccination record demonstrates the use of this message to update an entire immunization record and uses some of the optional segments in the message to provide additional information. For example, the PD1 segment records the medical home and states whether reminder/recall notices should be sent for this patient. The PV1 segment reports that the patient is a recurring patient who is VFC eligible and is a Medicaid patient. The effective date of his VFC and Medicaid status is June 7, 1990.

```
MSH|^~\&|Nextgen|MA0000|CIIS|CDPHE|19970901||VXU^V04|19970522MA53|T|2.3.1||NE|AL|<CR>
PID|||1234^SR^~1234-12^LR^~3872^MR^~5671^SS^~430078856^MA^
||KENNEDY^JOHN^FITZGERALD^JR^L|BOUVIER^M^M|19900607|M|KENNEDY^BABY BOY^B| 2106-
3^WHITE^HL70005|123 MAIN ST^APT 3B^LEXINGTON^MA^00210^M^MSACODE^MA034|||(617)555-
1212^PRN^PH^617^5551212^|EN^ENGLISH^HL70296^|||||N^NOT HISPANIC OR LATINO^HL70189^2186-
5^NOT HISPANIC OR LATINO^CDCRE1|CHILDREN'S HOSPITAL|<CR>
PD1|||CHILDREN'S CLINIC ^L^1234^FI^LEXINGTON HOSPITAL&5678&XX|12345^WELBY^MARCUS^DR
^MD^L^DN^|||||03^REMINDER/RECALL - NO CALLS^HL70215|Y|19900607||A|19900607|19900607|<CR>
NK1|1|KENNEDY^JACQUELINE^LEE|MTH^MOTHER^HL70063|||||||||||||6725^SS|<CR>
NK1|2|KENNEDY^JOHN^FITZGERALD|FTH^FATHER^HL70063|||||||||||||6618^SS|<CR>
PV1||R|||||||||A|||V02^19900607~H02^19900607|<CR>
RXA|0|1|19900607|19900607|08^HEPB-PEDIATRIC/ADOLESCENT^CVX^90744^HEPB^PEDIATRIC/
ADOLESCENT^C4|.5|ML^ISO+||03^HISTORICAL INFORMATION - FROM PARENT'S WRITTEN
RECORD^NIP0001|^JONES^LISA|^CHILDREN'S HOSPITAL||5|MCG^ISO+|MRK12345|199206|MSD^MERCK^
MVX|||CP|A|<CR>
RXA|0|1|19910907|19910907|50^DTAP-HIB^CVX^90721^DTAP-HIB^C4|.5|ML^ISO+||00^NEW IMMUNIZATION
RECORD^NIP0001|1234567890^SMITH^SALLY^S^VEI~1234567891^O^BRIAN^ROBERT^A^DR^MD^
^OEI|^CHILD HEALTHCARE CLINIC^101 MAIN STREET^BOSTON^MA|||W46932777|199208
|PMC^PASTEUR MERIEUX CONNAUGHT^MVX|||CP|A|19910907|120030|<CR>
RXR||IM^INTRAMUSCULAR^HL70162|LA^LEFT ARM^HL70163|<CR>
RXA|0|1|19910907|19910907|03^MMR^CVX|.5|ML^ISO+||00^NEW IMMUNIZATION
RECORD^NIP001|1234567890^SMITH^SALLY^S^VEI~1234567891^O^BRIAN^ROBERT^A^DR^MD^
^OEI|^CHILD HEALTHCARE CLINIC^101 MAIN STREET^BOSTON^MA|||W2348796456
|19920731|MSD^MERCK^MVX|||A|<CR>
RXR|SC^SUBCUTANEOUS^HL70162|LA^LEFT ARM^HL70163|<CR>
RXA|0|1|19950520|19950520|20^DTAP^CVX|.5|ML^ISO+||00^NEW IMMUNIZATION RECORD^NIP001
|1234567891^O^BRIAN^ROBERT^A^DR|^CHILD HEALTHCARE CLINIC^101 MAIN STREET^
BOSTON^MA|||W22532806|19950705|PMC^PASTEUR MERIEUX CONNAUGHT^MVX|||CP|A|<CR>
RXR||IM^INTRAMUSCULAR^HL70162|LA^LEFT ARM^HL70163|<CR>
RXA|0|2|19950520|19950520|03^MMR^CVX|.5|ML^ISO+||00^NEW IMMUNIZATION RECORD^NIP001
|1234567891^O^BRIAN^ROBERT^A^DR|^CHILD HEALTHCARE CLINIC^101 MAIN STREET^
```

BOSTON^MA|||W2341234567|19950630|MSD^MERCK^MVX|||A|<CR>  
RXR|SC^SUBCUTANEOUS^HL70162|LA^LEFT ARM^HL70163|<CR>

**VXQ Example #1** (Query with many identifiers)

The example below of a query for vaccination record demonstrates the use of this message to query the immunization registry for the immunization record of John Fitzgerald Kennedy, Jr., who was born on June 7, 1990. The request is being sent on May 22, 1997, at 4:05 p.m. All known patient identifiers are included in the sample query for use in matching records. These identifiers are defined by their position in the QRF segment.

MSH|^~\&||GA0000||MA0000|199705221605||VXQ^V01|19970522GA40|T|2.3.1|||NE|AL|<CR>  
QRD|199705221605|R||19970522GA05|||25^RD|^KENNEDY^JOHN^FITZGERALD^JR|VXI^VACCINE  
INFORMATION^HL70048|^SIIS|<CR>  
QRF|MA0000|||256946789~19900607~MA~MA99999999~88888888~KENNEDY^JACQUELINE^  
LEE~BOUVIER~898666725~KENNEDY^JOHN^FITZGERALD~822546618|<CR>

**VXQ Example #2** (Query with only a name identifier)

This query shows a request for the immunization record using only the patient's name. Using a limited number of identifiers may result in CIIS matching multiple records for the query.

MSH|^~\&||GA0000||MA0000|199705221605||VXQ^V01|19970522GA40|T|2.3.1|||NE|AL|<CR>  
QRD|199705221605|R||19970522GA05|||25^RD|^KENNEDY^JOHN|VXI^VACCINE  
INFORMATION^HL70048|^SIIS|<CR>

**VXR Example** (Response to VXQ Example #1 shown above)

The example below is typical of a response from an immunization registry to one of its participating private healthcare providers and demonstrates the use of optional segments in the message to provide more detail about the patient. Having made an exact match, this response sent by CIIS provides the patient's immunization history and other information. For example, the OBX segments document the Vaccine Information Statement (VIS) dates, specify dose numbers for each component in a combination vaccine, record an adverse event, and document the reaction to a PPD test.

MSH|^~\&||MA0000||GA0000|199705221610||VXR^V03^V03|19970522MA53|T|2.3.1|||NE|AL|<CR>  
MSA|AA|19970522GA40|<CR>  
QRD|199705221605|R||19970522GA05|||25^RD|^KENNEDY^JOHN^FITZGERALD^JR|VXI^VACCINE  
INFORMATION^HL70048|^SIIS|<CR>  
QRF|MA0000|||256946789~19900607~MA~MA99999999~88888888~KENNEDY^JACQUELINE^  
LEE~BOUVIER~898666725~KENNEDY^JOHN^FITZGERALD~822546618|<CR>  
PID|||1234^SR~1234-12^LR~3872^MR~221345671^SS~430078856^MA^  
||KENNEDY^JOHN^FITZGERALD^JR^L|BOUVIER^M|19900607|M|KENNEDY^BABY BOY^B|2106-  
3^WHITE^HL70005|123 MAIN ST^APT 3B^LEXINGTON^MA^00210^M^MSA CODE^MA034~345 ELM  
ST^BOSTON^MA^00314^BDL~^BR^MA002|||(617)555-1212^PRN  
^PH^617^5551212^|EN^ENGLISH^HL70296^|||||N^NOT HISPANIC OR LATINO^HL70189^2186-5^NOT  
HISPANIC OR LATINO^CDCRE1|CHILDREN'S HOSPITAL|<CR>  
PD1||CHILDREN'S CLINIC^L^1234^FI^LEXINGTON HOSPITAL&5678&XX|12345^WELBY^  
MARCUS^DR^MD^L^DN||||||03^REMINDER/RECALL - NO CALLS^HL70215|Y|19900607  
||A|19900607|19900607|<CR>  
NK1|1|KENNEDY^JACQUELINE^LEE|MTH^MOTHER^HL70063||||||||||||||||||6725^SS|<CR>  
NK1|2|KENNEDY^JOHN^FITZGERALD|FTH^FATHER^HL70063||||||||||||||||||6618^SS|<CR>  
PV1|R||||||||||||||V02^19900607~H02^19900607|<CR>  
RXA|0|1|19900607|19900607|08^HEPB-PEDIATRIC/ADOLESCENT^CVX^90744^HEPB-PEDATRIC  
/ADOLESCENT^C4|.5|ML^ISO+||03^HISTORICAL INFORMATION - FROM PARENT'S WRITTEN  
RECORD^NIP0001|^JONES^LISA|^CHILDREN'S HOSPITAL||5|MCG^ISO+|MRK12345|199206|MSD  
^MERCK^MVX|<CR>  
RXA|0|0|19901207|19901207|20^DTAP^CVX|.5|ML^ISO+||00^NEW IMMUNIZATION  
RECORD^NIP001|1234567891^O^BRIAN^ROBERT^A^DR^MD|^CHILD HEALTHCARE CLINIC^101 MAIN  
STREET^BOSTON^MA|||W22532806|19901230|PMC^PASTEUR MERIEUX  
CONNAUGHT^MVX|00^PARENTAL DECISION^NIP002|RE|<CR>  
OBX|1|TS|29768-9^DATE VACCINE INFORMATION STATEMENT PUBLISHED^LN|1|19900605|||||F|<CR>  
OBX|2|TS|29769-7^DATE VACCINE INFORMATION STATEMENT PRESENTED^LN|1|19901207|||||F|<CR>

**RXA**|0|1|19910907|19910907|50^DTAP-HIB^CVX^90721^DTAP-HIB^C4|.5|ML^ISO+||00^NEW IMMUNIZATION RECORD^NIP001|1234567890^SMITH^SALLY^S^~~~~~VEI~  
 1234567891^O^BRIAN^ROBERT^A^DR^MD^~~~~~OE||^CHILD HEALTHCARE CLINIC^~~~~101 MAIN STREET^BOSTON^MA|||W46932777|199208|PMC^PASTEUR MERIEUX CONNAUGHT  
 ^MVX||CP|A|19910907120030|<CR>  
**RXR**|IM^INTRAMUSCULAR^HL70162|LA^LEFT ARM^HL70163|<CR>  
**OBX**|1|NM|30936-9^DTAP/DTP DOSE COUNT IN COMBINATION VACCINE^LN|1|4||||F|<CR>  
**OBX**|2|NM|30938-5^HAEMOPHILUS INFLUENZAE TYPE B (HIB) DOSE COUNT IN COMBINATION VACCINE^LN|2|4||||F|<CR>  
**RXA**|0|1|19910907|19910907|03^MMR^CVX|.5|ML^ISO+||00^NEW IMMUNIZATION RECORD^NIP001|1234567890^SMITH^SALLY^S^~~~~~VEI~1234567891^O^BRIAN^ROBERT^A^DR^MD^~~~~~OE||^CHILD HEALTHCARE CLINIC^~~~~101 MAIN STREET^BOSTON^MA|||W2348796456|19920731|MSD^MERCK^MVX|<CR>  
**RXR**|SC^SUBCUTANEOUS^HL70162|LA^LEFT ARM^HL70163|<CR>  
**RXA**|0|5|19950520|19950520|20^DTAP^CVX|.5|ML^ISO+||1234567891^O^BRIAN^ROBERT^A^DR^MD|^CHILD HEALTHCARE CLINIC^~~~~101 MAIN STREET^BOSTON^MA|||W22532806|19950705| PMC^PASTEUR MERIEUX CONNAUGHT ^MVX|<CR>  
**RXR**|IM^INTRAMUSCULAR^HL70162|LA^LEFT ARM^HL70163|<CR>  
**RXA**|0|2|19950520|19950520|03^MMR^CVX|.5|ML^ISO+||00^NEW IMMUNIZATION RECORD^NIP001|1234567891^O^BRIAN^ROBERT^A^DR^MD|^CHILD HEALTHCARE CLINIC^~~~~101 MAIN STREET^BOSTON^MA|||W2341234567|19950630| MSD^ MERCK^MVX|<CR>  
**RXR**|SC^SUBCUTANEOUS^HL70162|LA^LEFT ARM^HL70163|<CR>  
**OBX**||FT|30948-4^VACCINATION ADVERSE EVENT AND TREATMENT, IF ANY^LN|1|ANAPHYLAXIS||||F|<CR>  
**NTE**||PATIENT DEVELOPED HIGH FEVER APPROX 3 HRS AFTER VACCINE INJECTION|<CR>  
**NTE**||VAERS FORM SUBMITTED BY PROVIDER|<CR>  
**RXA**|0|1|19960415|19960415|96^TST-PPD INTRADERMAL^CVX|5|TU|<CR>  
**OBX**||NM|1648-5^TUBERCULOSIS REACTION WHEAL 3D POST 5 TU ID^LN|1|1|MM||N||F||19960418|<CR>

**VXX Example** (Response with many matches)

In this VXX example, each Patient Identification Segment (PID) returns, along with its associated Next of Kin/Associated Parties Segment(s) (NK1). In this message, the query contained only the patient name of John Kennedy. The responding immunization registry found four patient matches to the query, as reflected in the four separate PID segments. Their associated NK1 segments provide information about the patient's associated parties that will allow the querying system to revise and send a more precise query.

**MSH**|^~\&||MAVACREC||GAVACREC|199705221610||VXX^V02|19970522MA53|T|2.3.1||NE|AL|<CR>  
**MSA**|AA|19970522GA40|<CR>  
**QRD**|199705221605|R||19950522GA05||25^RD|^KENNEDY^JOHN|VXI^VACCINE INFORMATION^HL70048^SIIS|<CR>  
**PID**|1||||KENNEDY^JOHN|<CR>  
**NK1**|1|KENNEDY^JANET^MARIE|MTH^MOTHER^HL70063||||||||||||9900^SS|<CR>  
**PID**|2||||KENNEDY^JOHN|<CR>  
**NK1**|1|KENNEDY^JACQUELINE|MTH^MOTHER^HL70063||||||||||||6725^SS|<CR>  
**NK1**|2|KENNEDY^JOHN^FITZGERALD|FTH^FATHER^HL70063||||||||||||6618^SS|<CR>  
**PID**|3||||KENNEDY^JOHN|<CR>  
**NK1**|1|KENNEDY^JACKIE^ANN|MTH^MOTHER^HL70063||||||||||||3102^SS|<CR>  
**PID**|4||||KENNEDY^JOHN|<CR>  
**NK1**|1|KENNEDY^JACILENE|MTH^MOTHER^HL70063||||||||||||6725^SS|<CR>  
**NK1**|2|KENNEDY^JACK|FTH^FATHER^HL70063||||||||||||8768^SS|<CR>

**ADT Example**

**MSH**|^~\&|||||VXU^V04|20090521CO50|P|2.5|<CR>  
**PID**||CO900009^DHN||KENNEDY^JOHN^FITZGERALD^JR|BOUVIER^M|19900607|M||~^MA^BDL|<CR>  
**NK1**|1|KENNEDY^JACQUELINE^LEE|MTH^MOTHER^HL70063|<CR>

### **ACK Example**

```
MSH|^~\&|CIIS|CIIS||ACME|20090620120157||ACK|00000456|P|2.5<CR>  
MSA|AA|00000123<CR>  
MSH|^~\&|CIIS|CIIS||ACME|20090620120157||ACK|00000458|P|2.5<CR>  
MSA|AE|00000125|INVALID MANUFACTURER CODE<CR>  
ERR|RXA^152^17^ 1<CR>
```

### **FILE TRANSMISSION METHODS**

Provider offices that will be sending ongoing HL7 batch files to CIIS will be required to establish a login to the CIIS secure FTP (sFTP) server in order to successfully and securely transmit their batch files to the registry. The preferred sFTP client is Cute FTP Professional.

<https://www.colorado.gov/pacific/cdphe/electronic-health-records#Meaningful use>

## FIELD LOCATIONS

R = Required, RE = Required But Can Be Empty, O = Optional

Field Name	Required Status	Description	HL7 Field
Patient ID	R	Client unique identifier	PID 3
Last Name	R	Client's last name	PID 5.1
First Name	R	Client's first name	PID 5.2
Middle Name	RE	Client's middle name	PID 5.3
Suffix	O	Client's name suffix	PID 5.4
Date of Birth	R	Client's date of birth (yyyymmdd)	PID 7
Gender	R	Client's gender – see <i>Vocabulary 1 - Sex</i>	PID 8
Patient Status	RE	Client's Active/Inactive status with the sending site – see <i>Vocabulary 22 – Client Status</i>	PD1-16
Social Security Number	RE	Last 4 Digits of Client's Social Security number	PID 19
Medicaid ID	O	Client's Medicaid ID	IN1 49
Street Address	R	Client's street address	PID 11.1
Apt #	R	Other designator	PID 11.2
City	R	Client's city	PID 11.3
State	R	Client's state	PID 11.4
Zip Code	R	Client's zip code	PID 11.5
County	RE	Client's county	PID 11.9 / PID 12
Phone Number	R	Client's phone number (10 digits)	PID 13
Email Address	RE	Client's email address	PID 13.4
Chart Number	O	Client's unique identifier within the provider organization	PID 18
Birth Certificate Number	O	Client's birth certification number	PID 4
Race	RE	Client's Race – see <i>Vocabulary 2 - Race</i>	PID 10
Ethnicity	RE	Client's Ethnicity – see <i>Vocabulary 3 – Ethnicity</i>	PID 22
Multiple	RE	Indicator that client is part of a multiple birth – see <i>Vocabulary - 11 Yes/No</i>	PID 24
Birth Order	O	A number indicating the client's birth order	PID

Field Name	Required Status	Description	HL7 Field
			25
Mother's Maiden Name	O	Client's mother's maiden name	PID 6
<b>Mother's Last Name</b>	<b>RE</b>	Client's mother's last name – Required if relevant data exists only for clients < 19 years old	NK1 2.1
<b>Mother's First Name</b>	<b>RE</b>	Client's mother's first name – Required if relevant data exists only for clients < 19 years old	NK1 2.2
Mother's Middle Name	O	Client's mother's middle name	NK1 2.3
<b>Father's Last Name</b>	<b>RE</b>	Client's father's last name	NK1 2.1
<b>Father's First Name</b>	<b>RE</b>	Client's father's first name	NK1 2.2
Father's Middle Name	O	Client's father's middle name	NK1 2.3
<b>Parent/Guardian Email Address</b>	<b>RE</b>	Parent/guardian's email address	NK1 5.4
Deceased	O	Indicator that client is deceased – see <i>Vocabulary 11 - Yes/No</i>	PID 30
Date of Death	O	Client's date of death	PID 29
<b>Insurance Type</b>	<b>RE</b>	Type of Insurance	IN1 2
<b>Financial Class</b>	<b>R</b>	Client's Financial Class is used to capture VFC eligibility status of patient – see <i>Vocabulary 8 - Financial Class. Required for VFC program providers</i>	PV1 20
<b>Filler Order Number</b>	<b>RE</b>	Unique number identifying a vaccination event	ORC 3
<b>Vaccine Funding Source</b>	<b>RE</b>	Source of payment for vaccine – This value is sent in an OBX segment following the RXA segment – see <i>Vocabulary 24 – Vaccine Funding Source.</i>	OBX 5
<b>Vaccination Code</b>	<b>R</b>	CVX code required	RXA 5.1
<b>Vaccination Short Description</b>	<b>R</b>	Description of the vaccination	RXA 5.2
<b>Vaccine Given Date</b>	<b>R</b>	Date vaccination given (yyyymmdd)	RXA 3
<b>Injection Route</b>	<b>RE</b>	Injection Route – see <i>Vocabulary 5 - Route of Admin</i>	RXR 1
<b>Injection Site</b>	<b>RE</b>	Injection site – see <i>Vocabulary 6 - Admin Site</i>	RXR 2
<b>Dosage</b>	<b>RE</b>	Vaccination dosage	RXA 6
<b>Immunization Information Source</b>	<b>R</b>	Source of Vaccine Information – see <i>Vocabulary 14 – Immunization Information Source</i>	RXA 9
<b>Administering Provider</b>	<b>RE</b>	Name and ID of Administering Provider	RXA 10
<b>Prescribing Provider</b>	<b>RE</b>	Name and ID of Prescribing Provider	ORC 12
<b>Administered at-Location</b>	<b>R</b>	Administered at-location	RXA 11 or

Field Name	Required Status	Description	HL7 Field
			ORC 13
Vaccine Lot Number	R	Vaccination lot number	RXA 15
Vaccine NDC Code	O	Vaccine NDC code <a href="http://www2a.cdc.gov/vaccines/IIS/IISStandards/vaccines.asp?rpt=ndc">http://www2a.cdc.gov/vaccines/IIS/IISStandards/vaccines.asp?rpt=ndc</a> This value should follow the vaccination lot number with a tilde (~) separating the two values.	RXA 15
Vaccine Manufacturer	R	Vaccination manufacturer – see <i>Vocabulary 13 – Manufacturer</i>	RXA 17
Contraindication	RE	Indicate that the observation is a contraindication – see <i>Vocabulary 25 – Observation Identifiers</i>	OBX 3
Contraindication Type	RE	Type of contraindication – see <i>Vocabulary 15 – Contraindications, Precautions and Immunities</i>	OBX 5
Contraindication Date Identified	RE	Date contraindication identified (yyyymmdd)	OBX 14
Reaction	RE	Indicate that the observation is an adverse reaction – see <i>Vocabulary 25 – Observation Identifiers</i>	OBX 3
Reaction Type	RE	Type of adverse reaction – see <i>Vocabulary 18 - Reaction</i>	OBX 5
Reaction Date Identified	RE	Date adverse reaction identified (yyyymmdd)	OBX 14

## CIIS-SPECIFIC STANDARDS

CIIS strictly requires the inclusion of unique client identifiers and financial class and strongly encourages the inclusion of vaccine funding source and priority group categories in any HL7 message sent to the registry for the reasons outlined below.

### ***Importance of Uniquely Identifying Patients***

Client record duplication obscures an accurate picture of a client’s immunization history and can directly affect the quality of patient care. Unique identifiers – chart number or birth certificate number, for example - are important tools that effectively clarify differences in client entries. Although not strictly required fields, including the mother’s name in the NK1 segment, along with the proper relationship code in NK1-3, is ***extremely valuable*** to the de-duplication process. This information is especially important when a child’s name changes or when variations (Bob – Robert) are submitted at different times from various providers.

### ***Patient’s Eligibility for the Vaccines for Children (VFC) Program***

VFC is a federally funded program that provides vaccines at no cost to children from birth through 18 years of age who might not otherwise be vaccinated because of inability to pay. All active enrolled VFC providers are required to document a child’s VFC eligibility status at every office visit. Capturing and transmitting the VFC eligibility status of the patient in the PV1.20 field (Financial Class – VFC Code) is ***extremely important*** in helping to determine a patient’s eligibility for this program as well as assisting Colorado VFC providers in the completion of their annual benchmarking reports. CIIS requires this information for participating provider on all patients under 19 years old.

### ***Vaccine Funding Source***

Provider offices participating in Colorado's VFC program are accountable for every publicly-funded vaccine that they administer within their clinic. Including the vaccine funding source in the OBX-5 segment for each administered vaccine helps both public and private clinics manage their vaccine inventory.

### ***Vaccination Action Code***

CIIS places importance on the Vaccination Action Code field, RXA-21, as part of an HL7 VXU message. The purpose of the Vaccination Action Code field is to indicate the action expected by the sending system: a new event, an update to a previously communicated event, or removal of a previously communicated event. Vaccination Action Code (RXA-21) values can be found in **Appendix B, Vocabulary 10 – Action code**.

There are two possible scenarios if an Action Code of U or D is present in RXA-21. In either scenario, if an existing vaccination event is not located in CIIS, the vaccination will be added if the Action Code is U and no action is taken when Action Code is D.

- 1) If the interface has been setup to send the Filler Order Number, ORC-3, this value is used to locate the previously communicated vaccination event and take the appropriate action.
- 2) If a Filler Order Number has not been previously been communicated, CIIS will use the vaccination date and the vaccination code to retrieve the previously stored vaccination event. If either of these values are different from the originally communicated event, CIIS cannot guarantee action will be taken on the correct vaccination event in all cases. Further explanation is noted below.

Note: CIIS employs specific criteria for determining whether to add or update an immunization that does not rely directly on this field. For this reason it is common practice to indicate action as "Add" even if this vaccination has been previously reported. It is important to not assume that "Updates" will be or need to be specifically indicated.

### ***Outbreak Countermeasure Priority***

In the case of an outbreak or other public health event, a mass immunization campaign may be deployed that follows a priority pattern for the population. The priority group into which the client falls will be important information, allowing him/her to get immunized at an appropriate time during an outbreak. This data will be held in an OBX segment using the codes defined in *Appendix B, Vocabulary 21 - Priority Group Category*. An example OBX segment is shown in the Segment Listings – OBX.

## **COMMON PROBLEM SEGMENTS**

In working with various provider offices and EHR vendors on electronic HL7 interfaces to the immunization registry, CIIS has noticed some common "problem" segments. The majority of EHR vendors have exhibited difficulty in capturing and/or transmitting VFC eligibility codes in the Financial Class field (PV1.20 segment), Next of Kin information (NK1 segment) and Body Site and Administration Route (contained in the RXR segment). In addition, several EHR vendors have not been able to send the common Immunization Information Source values in RXA.9 that specify whether an immunization was administered by the clinic or entered historically for the patient. For clinics with this RXA.9 difficulty, CIIS uses the presence of a lot number in the HL7 message to discern and determine whether the service was administered or historical.

The cause of these observed difficulties is two-fold. Some interfaces are not configured with the templates needed to pull these data fields from the EHR, and some provider offices are either not entering these values into their EHR or entering these values into the wrong data fields in their EHR (thus preventing the interface from grabbing the correct data). We ask you to pay particular attention to these common problem segments when developing your messages. Resolving these issues may necessitate additional EHR-related training for provider offices.

## SEGMENT LISTINGS

### **MSH - Message Header Segment**

The MSH is used to define the intent, source, destination, and some specifics of the syntax of a message.

Sequence	Type	Length	Required	Element Name	Description
1	ST	1	R	<b>Field Separator</b>	The character to be used as the field separator for the rest of the message. The recommended value is   (pipe)
2	ST	4	R	<b>Encoding Characters</b>	Four characters in the following order: component separator, repetition separator, escape character, and subcomponent separator. The recommended values are ^~\&
3	HD	180	O	Sending Application	Optional
4	HD	180	R	<b>Sending Facility</b>	This field contains the address of the sending facility. Site codes defined by CIIS.
5	HD	180	R	<b>Receiving Application</b>	CIIS^ 2.16.840.1.114222.4.1.144.2.4^ISO
6	HD	180	R	<b>Receiving Facility</b>	CDPHE^2.16.840.1.114222.4.1.144^ISO
7	DTM	26	R	<b>Date/Time of Message</b>	Time stamp (TS) data type must be in the format: YYYY[MM[DD[HHMM[SS[.S[S[S[S]]]]]]]] [+/-ZZZZ]^<degree of precision>
8	ST	40	N/A	Security	Not Used
9	CM	7	R	<b>Message Type</b>	VXU^V04
10	ST	20	R	<b>Message Control ID</b>	Unique ID for message – Site Code + Date/Time Stamp
11	PT	3	R	<b>Processing ID</b>	Values: D – Debugging P – Production T – Training
12	VID	60	R	<b>Version ID</b>	HL7 version number, e.g., 2.3.1 or 2.5
13	NM	15	O	Sequence Number	
14	ST	180	O	Continuation Pointer	
15	ID	2	O	Accept Acknowledgment Type	This field indicates whether enhanced acknowledgments are requested. Values: AL – Always or <Null>

**Example:**

**MSH|^~\&||CMC|CIIS^ISO|CIIS^ISO|200905211245||VXU^V04| 200905211245|T|2.5||NE|AL|<CR>**

**PID – Patient Identification**

Sequence	Type	Length	Required	Element Name	Description
1	SI	4	O	Set ID – PID	The Set ID field numbers the repetitions of the segment. For the first occurrence of the segment, the sequence number shall be one, for the second occurrence, the sequence number shall be two, etc.
2	CX	20	N/A	Patient ID	This field is for backward compatibility only.
3	CX	20	R	<b>Patient ID</b>	This field contains the list of identifiers (one or more) used by immunization registries and their participants to uniquely identify a patient (e.g., medical record number, billing number, birth registry, national unique individual identifier, etc.)
4	CX	20	O	Alternate Patient ID – PID	This field is for backward compatibility only.
5	XPN	48	R	<b>Patient Name</b>	The current, assumed legal name of the patient should be sent in this field. The name type code in this field should always be “L” for “Legal.” All other names for the patient should be sent in <i>PID-9-Patient alias</i> . Repetition of this field is allowed only for representing the same name in different 41 character sets, a situation that will rarely arise. Therefore, for practical purposes, this field should be considered not repeating.
6	XPN	48	O	Mother’s Maiden Name	This field contains the family name under which the mother was born (e.g., before marriage). It is used to distinguish between patients with the same last name. The name type code should be valued “M” for “Maiden Name.” If a system needs additional information about the mother, the NK1 segment should be used.
7	DTM	26	R	<b>Date/ Time of Birth</b>	This field contains the patient's date and (if applicable) time of birth. If not present, the HHMM portion will default to 0000.
8	IS	1	R	<b>Sex</b>	This field contains the patient's gender. Refer to <i>Vocabulary 1 - Sex</i> for valid values.

Sequence	Type	Length	Required	Element Name	Description
9	XPN	48	O	Patient Alias	This field contains names by which the patient has been known at some time.
10	CWE	80	RE	Race	This field identifies the patient's race. Refer to <i>Vocabulary 2 - Race</i> for suggested values. This field is allowed to repeat, so several races may be reported for one patient.
11	XAD	106	R	Patient Address	This field lists the mailing address of the patient. Multiple addresses for the same person may be sent in the following sequence: the primary mailing address must be sent first in the sequence; if the mailing address is not sent, then a repeat delimiter must be sent in the first sequence. If there is only one repetition of this field and an address type is not given, it is assumed to be the primary mailing address.
12	IS	4	RE	County	This field contains the patient's county of residence. Alternatively, the county may be sent as a component of the address, in field 11.9.
13	XTN	40	R	Phone Number – Home	The patient's personal phone numbers. All personal phone numbers for the patient are sent in this sequence. The first sequence is considered the primary number. If the primary number is not sent, then a repeat delimiter is sent in the first sequence. Note: Subcomponent 4 of the XTN type allows for the communication of the patient's email address.
14	XTN	40	O	Phone Number – Work	
15	CWE	60	O	Primary Language	Patient's primary language. Refer to <i>Vocabulary 23 User-defined Table 0296 - Language (ISO 639)</i> for suggested values.
16	CWE	80	O	Marital Status	
17	CWE	80	O	Religion	
18	CX	20	O	Patient Account Number	Patient's account number with their provider.
19	ST	16	RE	SSN Number – Patient	Last 4 digits only.
20	DLN	25	O	Driver's License Number – Patient	
21	CX	20	O	Mother's Identifier	

Sequence	Type	Length	Required	Element Name	Description
22	CWE	80	RE	Ethnicity	
23	ST	60	O	Birth Place	This field gives the location of the patient's birth. Immunization registries may use this field for the name of the facility where the patient was born. This information may be used in conjunction with <i>PID-11-Patient address</i> with address type as "location of birthing facility."
24	ID	1	RE	Multiple Birth Indicator	This field indicates whether the patient was part of a multiple birth. Refer to <i>HL7 Table 0136 - Yes/No indicator</i> for valid values.
25	NM	2	O	Birth Order	If the patient was part of a multiple birth, a number indicating the patient's birth order is entered in this field. This field should only be used if <i>PID-24-Multiple birth indicator</i> is valued as "Yes."
26	CWE	80	O	Citizenship	
27	CWE	60	O	Veterans Military Status	
28	CWE	80	O	Nationality	
29	DTM	26	O	Patient Death Date and Time	
30	ID	1	O	Patient Death Indicator	This field indicates whether or not the patient is deceased. Refer to <i>HL7 Table 0136 - Yes/No indicator</i> for valid values.

**Example:**

**PID**||1234^^^SR~1234-12^^^LR~00725^^^MR^|Doe^John^Fitzgerald^JR^^L||20001007|M||2106-3^White^HL70005|123 Peachtree ST^APT 3B^Atlanta^GA^30210^^M^GA067|(678)555-1212^PRN|<CR>

**PV1 - Patient Visit Segment**

The PV1 segment is used to send visit-specific information, including the required VFC eligibility status for the patient.

Sequence	Type	Length	Required	Element Name	Description
1	SI	4	O	Set ID	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.
2	IS	1	O	Patient Class	This field is used by systems to categorize patients by site. It does not have a consistent industry-wide

Sequence	Type	Length	Required	Element Name	Description
					definition. We recommend that immunization registries record all patients as recurring. Refer to <i>User-defined Table 0004 - Patient class</i> for suggested values.
3	PL	80	O	Assigned patient location	
4	IS	2	O	Admission type	
5	CX	20	O	Pre-admit number	
6	PL	80	O	Prior patient location	
7	XCN	60	O	Attending doctor	
8	XCN	60	O	Referring doctor	
9	XCN	60	O	Consulting doctor	
10	IS	3	O	Hospital service	
11	PL	80	O	Temporary location	
12	IS	2	O	Pre-admit test indicator	
13	IS	2	O	Re-admission indicator	
14	IS	3	O	Admit source	
15	IS	2	O	Ambulatory status	
16	IS	2	O	VIP indicator	
17	XCN	60	O	Admitting doctor	
18	IS	2	O	Patient type	
19	CX	20	O	Visit number	
20	FC	50	R	<b>Financial class</b>	This field contains the financial class(es) assigned to the patient for the purpose of identifying sources of reimbursement. <b>*CIIS uses this field to capture the VFC eligibility status of the patient.*</b> Refer to <i>Vocabulary 8 - Financial class</i> for suggested values.
21	IS	2	O	Charge price indicator	
22	IS	2	O	Courtesy code	
23	IS	2	O	Credit rating	
24	IS	2	O	Contract code	
25	DT	8	O	Contract effective date	
26	NM	12	O	Contract amount	
27	NM	3	O	Contract period	

Sequence	Type	Length	Required	Element Name	Description
28	IS	2	O	Interest code	
29	IS	1	O	Transfer to bad debt code	
30	DT	8	O	Transfer to bad debt date	
31	IS	10	O	Bad debt agency code	
32	NM	12	O	Bad debt transfer amount	
33	NM	12	O	Bad debt recovery amount	
34	IS	1	O	Delete account indicator	
35	DT	8	O	Delete account date	
36	IS	3	O	Discharge disposition	
37	CM	25	O	Discharged to location	
38	CE	80	O	Diet type	
39	IS	2	O	Servicing facility	
40	IS	1	O	Bed status	
41	IS	2	O	Account status	
42	PL	80	O	Pending location	
43	PL	80	O	Prior temporary location	
44	TS	26	O	Admit date/time	
45	TS	26	O	Discharge date/time	
46	NM	12	O	Current patient balance	
47	NM	12	O	Total charges	
48	NM	12	O	Total adjustments	
49	NM	12	O	Total payments	
50	CX	20	O	Alternate visit ID	
51	IS	1	O	Visit indicator	
52	XCN	60	O	Other healthcare provider	

**Example:**

**PV1**||R|||||||V02^19900608~H02^19890601|<CR>

**PD1 - Patient Additional Demographic**

The Patient Additional Demographic segment contains demographic information that is likely to change about the patient.

Sequence	Type	Length	Required	Element Name	Description
1	IS	2	O	Living dependency	
2	IS	2	O	Living arrangement	
3	XON	90	O	Patient primary facility	
4	XCN	90	O	Patient primary care provider name & ID number	
5	IS	2	O	Student indicator	
6	IS	2	O	Handicap	
7	IS	2	O	Living will	
8	IS	2	O	Organ donor	
9	ID	1	O	Separate bill	
10	CX	20	O	Duplicate patient	
11	CE	80	O	Publicity code	
12	ID	1	O	Protection indicator	
13	DT	8	O	Protection Indicator effective date	
14	XON	250	O	Place of worship	
15	CE	250	O	Advance directive code	
16	IS	1	RE	<b>Immunization registry status</b>	This field indicates the client's status with the provider sending the records. <i>Vocabulary 22 – Client Status</i> gives suggested values as defined in HL7 Standard Version 2.4. If no value is present, client status is set to Active.
17	DT	8	O	Immunization registry status effective date	
18	DT	8	O	Publicity code effective date	

**Example:**

```
PD1|||CHILDREN'S CLINIC^L^1234^^^FI^LEXINGTON
HOSPITAL&5678&XX|12345^WELBY^MARCUS^^DR^MD^^L^^DN|||||03^REMINDER/RECALL -
NO CALLS^HL70215|Y|19900607
|||A|19900607|19900607|<CR>
```

**NK1- Next of Kin/Associated Parties Segment**

The Next of Kin/Associated Parties segment contains information about the patient's next of kin and other associated or related parties. It is allowed to repeat, providing information about multiple related parties.

Sequence	Type	Length	Required	Element Name	Description
1	SI	4	O	Set ID - NK1	The Set ID field numbers the repetitions of the segment within its association with the PID. For the first occurrence of the segment, the sequence number shall be one, for the second occurrence, the sequence number shall be two, etc.
2	XPN	48	R	Name	This field gives the name of the next of kin or associated party. Multiple names for the same person are allowed, but the legal name must be sent in the first sequence. If the legal name is not sent, then the repeat delimiter must be sent in the first sequence.
3	CE	60	R	Relationship	This field defines the personal relationship of the next of kin. <i>Vocabulary 4 - Relationship</i> gives suggested values as defined in HL7 Standard Version 2.4. It is recommended that the original table in Version 2.0 of the Guide, which was based on X12N standard relationship codes, be replaced with the new HL7 table from Version 2.4 in order to keep the codes consistent with the newer HL7 implementations.
4	XAD	106	O	Address	This field lists the mailing address of the next of kin/associated party. Multiple addresses for the same person may be sent in the following sequence: the primary mailing address must be sent first in the sequence; if the mailing address is not sent, then a repeat delimiter must be sent in the first sequence. If there is only one repetition of this field and an address type is not given, it is assumed to be the primary mailing address.
5	XTN	40	O	Phone number	The next of kin/associated party's personal phone numbers. All personal phone numbers for the next of kin/associated party are sent in this sequence. The first sequence is considered the primary number. If the primary number is not sent, then a repeat delimiter is sent in the first sequence.
6	XTN	40	O	Business phone number	
7	CE	60	O	Contact role	
8	DT	8	O	Start date	

Sequence	Type	Length	Required	Element Name	Description
9	DT	8	O	End date	
10	ST	60	O	Next of Kin/AP job title	
11	JCC	20	O	Next of Kin/AP job code/class	
12	CX	20	O	Next of Kin/AP employee number	
13	XON	90	O	Organization name - NK1	
14	CE	80	O	Marital status	
15	IS	1	O	Sex	
16	TS	26	O	Date/time of birth	
17	IS	2	O	Living dependency	
18	IS	2	O	Ambulatory status	
19	CE	80	O	Citizenship	
20	CE	60	O	Primary language	
21	IS	2	O	Living arrangement	
22	CE	80	O	Publicity code	
23	ID	1	O	Protection indicator	
24	IS	2	O	Student indicator	
25	CE	80	O	Religion	
26	XPN	48	O	Mother's maiden name	
27	CE	80	O	Nationality	
28	CE	80	O	Ethnic group	
29	CE	80	O	Contact reason	This field identifies the role the next of kin/associated party plays with respect to the patient. Immunization registries may use this field to indicate the next of kin/associated party who is designated to receive reminder/recall notices, if applicable. This field may also be used to indicate the next of kin/associated party who is responsible for the patient's care. Refer to <i>User-defined Table 0222 - Contact reason</i> for suggested values.
30	XPN	48	O	Contact person's name	
31	XTN	40	O	Contact person's phone number	
32	XAD	106	O	Contact person's address	
33	CX	32	O	Next of Kin/AP's	

Sequence	Type	Length	Required	Element Name	Description
				identifiers	
34	IS	2	O	Job status	
35	CE	80	O	Race	
36	IS	2	O	Handicap	
37	ST	16	O	Contact person social security #	

**Examples:**

These example segments provide the Social Security numbers of the patient's parents:

**NK1|1|KENNEDY^JACQUELINE^LEE|MTH^MOTHER^HL70063|||||||||||||||||||||||||||||||||||||||||6725^^^SS|<CR>**  
**NK1|2|KENNEDY^JOHN^FITZGERALD|FTH^FATHER^HL70063|||||||||||||||||||||||||||||||||||||||||6618^^^SS|<CR>**

**RXA – Pharmacy Administration**

Sequence	Type	Length	Required	Element Name	Description
1	NM	4	R	<b>Give Sub-ID Counter</b>	For immunization registries, this field's value should always be zero.
2	NM	4	O	Administration Sub-ID Counter	Value starts with one for the first time this medication is administered for this order and increases by increments of one with each additional administration of medication. This field can be used to record dose number for a particular vaccine series and product, if applicable. When the vaccine product administered is part of only one vaccine series (e.g., DTaP, MMR, etc.), a single digit number representing the series dose number should be entered. When a combination vaccine covering more than one series is administered, use the OBX segment to record dose numbers of various components. If a vaccine is offered to the patient and refused, the number 0 should be recorded for the dose number in RXA-2 (see RXA-18 for recording refusal reason). Since RXA-2 is a required field in HL7, registries that choose not to record dose number should enter "999" in this field.
3	DTM	26	R	<b>Date/Time Start of Administration</b>	This field records when the administration is started. CIIS uses this field to show the vaccination date.
4	DTM	26	O	Date/Time End of Administration	Where administration continues over some time, the end date/time may be recorded. For typical vaccines, the end

Sequence	Type	Length	Required	Element Name	Description
					of administration is the same as the start of administration given in <i>RXA-3 date/time start of administration</i> , so the <i>RXA-3</i> date is repeated in <i>RXA-4</i> .
5	CWE	100	R	<b>Administered Code</b>	The immunization record of the particular vaccine administered. Format: <Identifier>^<Text>^<Name of coding system> Ex: 01^diphtheria tetanus toxoids and pertussis vaccine^CVX <b>* CVX is required*</b>
6	NM	20	RE	<b>Administered Amount</b>	This field records the amount of pharmaceutical administered. The units are expressed in the next field, <i>RXA-7</i> . Registries that do not collect the administered amount should record the value "999" in this field.
7	CWE	60	O	Administered Units	This field is conditional because it is required if the administered amount code does not imply units. Must be in simple units that reflect the actual quantity of the substance administered. It does not include compound units.
8	CWE	60	RE	<b>Administered Dosage Form</b>	
9	CWE	200	R	<b>Administration Notes</b>	Free text notes from the provider administering the medication. If coded, requires a user-defined table. If free text, place a null in the first component and the text in the second, e.g.,  ^this is a free text administration note . Immunization registries may use this field to record information that is not found elsewhere in the message; e.g., indicate the source of information for this immunization record or, more generically, whether the immunization being reported has just been administered (new) or came from other records (historical). Refer to <i>Vocabulary 14 - Immunization Information Source</i> for these codes.
10	XCN	200	RE	<b>Administering Provider</b>	This field is intended to contain the name and provider ID of the person physically administering the vaccine. This person (the "vaccinator") should be listed first. In addition, immunization registries may desire to record the provider who ordered the immunization (the "orderer") and/or the person who

Sequence	Type	Length	Required	Element Name	Description
					recorded the immunization into the registry (the “recorder”). These persons may also be listed. In order to distinguish between these persons, the following identifier type codes should be used: VEI - for vaccinator employee number; OEI - for orderer employee number (Note: The person identified by this code should be the same person listed in ORC-12, Orderer, for those systems that use the ORC segment); and REI - for recorder employee number.
11	CM	200	RE	<b>Administered-at Location</b>	Name and address of facility where vaccine was administered, if applicable. If empty and immunization was not entered historically, this value should be communicated using ORC-13.
12	ST	20	O	Administered Per (Time Unit)	
13	NM	20	O	Administered Strength	
14	CWE	60	O	Administered Strength Units	
15	ST	20	R	<b>Substance Lot Number</b>	This field records the lot number of the vaccine administered. The NDC code can also be added to this field and should follow the vaccination lot number with a tilde (~) separating the two values.
16	DTM	26	RE	<b>Substance Expiration Date</b>	
17	CWE	60	R	<b>Substance Manufacturer Name</b>	This field records the manufacturer of the medical substance administered. For purposes of transmission of immunization data in immunization registries, the MVX codes from the <i>Vocabulary 13 - Manufacturers of vaccines</i> should be used.
18	CWE	200	RE	<b>Substance/Treatment Refusal Reason</b>	When applicable, this field records the reason the patient refused the medical substance. 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, with the number 0 recorded for the dose number in RXA-2. See discussion at RXA 4.8.14.20 below. <b>*Do not record</b>

Sequence	Type	Length	Required	Element Name	Description
					<b>contraindications and immunities in this field. They should be recorded in OBX segments.*</b>
19	CWE	200	O	Indication	
20	ID	2	RE	<b>Completion Status</b>	Refer to Vocabulary 26 – <i>Completion Status</i> for valid values. If empty, assumed value is CP (Complete)
21	ID	2	RE	<b>Action Code – RXA</b>	Status of record. This field provides a method of correcting vaccination information previously transmitted with incorrect patient identifying information. Refer to Vocabulary 10 – <i>Action codes</i> for valid values. If empty, assumed value is A (Add).
22	DTM	26	RE	<b>System Entry Date/Time</b>	

**Example:**

RXA|0|1|19900607|19900607|08^HEPB-PEDIATRIC/ADOLESCENT^CVX|.5|ML^ISO+|||||||  
MRK12345||MSD^MERCK^MVX|||A|19900607<CR>

**RXR – Pharmacy Route**

Sequence	Type	Length	Required	Element Name	Description
1	CWE	60	RE	<b>Route</b>	This field is the route of administration (e.g., intramuscular, oral, etc.). Refer to <i>HL7 Vocabulary 5 - Route of administration</i> for valid values.
2	CWE	60	RE	<b>Administration Site</b>	This field contains the site of the administration route (e.g., left arm, right leg). Refer to <i>Vocabulary 6 - Administrative site</i> for valid values.
3	CWE	60	O	Administration Device	
4	CWE	60	O	Administration Method	
5	CWE	60	O	Routing Instruction	

**Example:**

RXR||IM^INTRAMUSCULAR^HL70162|LA^LEFT ARM^HL70163|

This RXR segment shows that a vaccine was administered intramuscularly in the left arm.

### ORC - Common Order Segment

The Common Order Segment is used to transmit fields that are common to all orders (all types of services that are requested).

Sequence	Type	Length	Required	Element Name	Description
1	ID	2	O	Order control	
2	EI	22	O	Placer order number	
3	EI	22	O	Filler order number	Unique identifier for each vaccination event.
4	EI	22	O	Placer group number	
5	ID	2	O	Order status	
6	ID	1	O	Response flag	
7	TQ	200	O	Quantity/timing	
8	CM	200	O	Parent	
9	TS	26	O	Date/time of transaction	
10	XCN	120	O	Entered by	
11	XCN	120	O	Verified by	
12	XCN	120	RE	Ordering provider	
13	PL	80	RE	Enterer's location	If empty and immunization was not entered historically, this value should be communicated using ORC-13. Not required if immunizations in the following RXA segments are entered as historical.
14	XTN	40	O	Call back phone number	
15	TS	26	O	Order effective date/time	
16	CE	200	O	Order control code reason	
17	CE	60	O	Entering organization	
18	CE	60	O	Entering device	
19	XCN	120	O	Action by	
20	CE	40	O	Advanced beneficiary notice code	
21	XON	60	O	Ordering facility name	
22	XAD	106	O	Ordering facility address	
23	XTN	48	O	Ordering facility phone number	
24	XAD	106	O	Ordering provider address	

**Example:**

ORC|RE|||||1234567^Welby^Marcus^J^Jr^Dr.^MD^L|||||Peachtree Clinic|101 Main Street^^Atlanta^GA^38765^^O^^GA121|(404)554-9097^WPN|101 Main Street^^Atlanta^GA^38765^^O^^GA121|<CR>

**NTE – Notes and Comments**

Sequence	Type	Length	Required	Element Name	Description
1	SI	4	O	Set ID - NTE	
2	ID	8	O	Source of Comment	
3	FT	65536	O	Comment	
4	CE	250	O	Comment Type	

**Example:**

NTE|||PATIENT DEVELOPED HIGH FEVER APPROX 3 HRS AFTER VACCINE INJECTION|<CR>

**ERR – Error**

Sequence	Type	Length	Required	Element Name	Description
1	CM	80	R	<b>Error Code and Location</b>	The first component identifies the segment ID containing the error. The second component identifies the input file line number of the segment containing the error. The third component identifies by ordinal number the field containing the error. The fourth component identifies by ordinal number the field sub-component containing the error (0 if not applicable).

**Example:**

ERR|RXA^152^17^ 1<CR>

**MSA – Message Acknowledgement**

Sequence	Type	Length	Required	Element Name	Description
1	ID	2	R	<b>Acknowledgement Code</b>	AA (Application Accept) means the message was processed normally. AE (Application Error) means an error prevented normal processing.
2	ST	20	R	<b>Message Control ID</b>	The message control ID from MSH-10 in the message being acknowledged. This allows the sending system to associate this response with the message being

					responded to.
3	ST	80	R	<b>Text Message</b>	Text of error message, used when MSA-1 does not have the normal value of AA.

**Example:**

MSA|AE|00000125||INVALID MANUFACTURER CODE<CR>

**OBX – Observation/Result**

Sequence	Type	Length	Required	Element Name	Description
1	SI	4	R	Set ID - OBX	
2	ID	2	R	Value Type	Type for value in OBX-5
3	CE	250	R	<b>Observation Identifier</b>	This indicates what this observation refers to. It poses the question that is answered by OBX-5.
4	ST	20	R	Observation Sub-ID	Positive number used to group related observations
5	varies	99999	R	<b>Observation Value</b>	This is the observation value and answers the question posed by OBX-3
6	CE	250	O	Units	
7	ST	60	O	References Range	
8	IS	5	O	Abnormal Flags	
9	NM	5	O	Probability	
10	ID	2	O	Nature of Abnormal Test	
11	ID	1	RE	<b>Observation Result Status</b>	
12	TS	26	O	Effective Date of Reference Range	
13	ST	20	O	User Defined Access Checks	
14	TS	26	RE	<b>Date/Time of the Observation</b>	
15	CE	250	O	Producer's ID	
16	XCN	250	O	Responsible Observer	
17	CE	250	O	Observation Method	
18	EI	22	O	Equipment Instance Identifier	
19	TS	26	O	Date/Time of the Analysis	

**Examples:**

**Contraindication**

**OBX**|1|CE|30945-0^Vaccination contraindication/precaution^LN|1|33^immunity: varicella (chicken pox)^NIP004|||||F|<CR>

**Adverse Reaction**

**OBX**|1|FT|30948-4^VACCINATION ADVERSE EVENT AND TREATMENT, IF ANY^LN|1|ANAPHYLAXIS|||||F|<CR>

**Vaccine Funding Source**

**OBX**|1|CE|30963-3^Vaccine purchased with^LN|1|PBF^Public funds^NIP008|||||F|<CR>

**Outbreak Priority Level**

**OBX**|1|CE| ^Priority Group|1| CIT1^ Critical Infrastructure, Tier 1|||||F|<CR>

**VIS date and given date (For combination vaccination)**

**RXA**|0|1|20140528||51^HEP B / HIB-HEPATITIS B HIB COMBINED VACCINE  
IM^CVX|0.5|ML^ISO+||00^NEW IMMUNIZATION

RECORD^NIP001|1234567891^O'BRIAN^ROBERT^A^DR^MD|26601^^26600^^^GME FAMILY  
MED|||| W22532806||SKB^GlaxoSmithKline^MVX||||CP|A

**OBX** |1|CE|30956-7^vaccine type^LN|1|08^Hepatitis B^CVX|||||F|

**OBX** |2|TS|29768-9^VIS Publication Date^LN|1|20120202|||||F|||20140528

**OBX** |3|TS|29769-7^VIS Presentation Date^LN|1|20140528|||||F|||20140528

**OBX** |4|CE|30956-7^vaccine type^LN|2|48^HIB^CVX|||||F|

**OBX** |5|TS|29768-9^VIS Publication Date^LN|2|20140204|||||F|||20140528

**OBX** |6|TS|29769-7^VIS Presentation Date^LN|2|20140528|||||F|||20140528

**IN1 – Insurance**

Sequence	Type	Length	Required	Element Name	Description
1	SI	4	O	Set ID - IN1	
2	CE	250	O	Insurance Plan ID	
3	CX	250	O	Insurance Company ID	
4	XON	250	O	Insurance Company Name	
5	XAD	250	O	Insurance Company Address	
6	XPN	250	O	Insurance Co. Contact Person	
7	XTN	250	O	Insurance Co. Phone Number	
8	ST	12	O	Group Number	
9	XON	250	O	Group Name	
10	CX	250	O	Insured's Group Employee ID	
11	XON	250	O	Insured's Group Employee Name	
12	DT	8	O	Plan Effective Date	

Sequence	Type	Length	Required	Element Name	Description
13	DT	8	O	Plan Expiration Date	
14	AUI	239	O	Authorization Information	
15	IS	3	O	Plan Type	
16	XPN	250	O	Name Of Insured	
17	CE	250	O	Insured's Relationship To Patient	
18	TS	26	O	Insured's Date Of Birth	
19	XAD	250	O	Insured's Address	
20	IS	2	O	Assignment Of Benefits	
21	IS	2	O	Coordination Of Benefits	
22	ST	2	O	Coordination Of Benefits Priority	
23	ID	1	O	Notice Of Admission Flag	
24	DT	8	O	Notice Of Admission Date	
25	ID	1	O	Report Of Eligibility Flag	
26	DT	8	O	Report Of Eligibility Date	
27	IS	2	O	Release Information Code	
28	ST	15	O	Pre-Admit Cert (PAC)	
29	TS	26	O	Verification Date/Time	
30	XCN	250	O	Verification By	
31	IS	2	O	Type Of Agreement Code	
32	IS	2	O	Billing Status	
33	NM	4	O	Lifetime Reserve Days	
34	NM	4	O	Delay Before L.R. Day	
35	IS	8	O	Company Plan Code	
36	ST	15	O	Policy Number	
37	CP	12	O	Policy Deductible	
38	CP	12	O	Policy Limit - Amount	
39	NM	4	O	Policy Limit - Days	
40	CP	12	O	Room Rate - Semi-Private	
41	CP	12	O	Room Rate - Private	

Sequence	Type	Length	Required	Element Name	Description
42	CE	250	O	Insured's Employment Status	
43	IS	1	O	Insured's Administrative Sex	
44	XAD	250	O	Insured's Employer's Address	
45	ST	2	O	Verification Status	
46	IS	8	O	Prior Insurance Plan ID	
47	IS	3	O	Coverage Type	
48	IS	2	O	Handicap	
49	CX	250	O	Insured's ID Number	
50	IS	1	O	Signature Code	
51	DT	8	O	Signature Code Date	
52	ST	250	O	Insured's Birth Place	
53	IS	2	O	VIP Indicator	

**Example:**

```
IN1|1|SP||SELF
PAY|||||XXXXXX||||XXXXXXXX^XXXXXXXXX^XXXXXXXX^|SP|||||||||||||||||XX^XXXXXXXXXX
XXXX XXXX|||
```

## APPENDIX A – HL7 DATA TYPES

### ST - String Data

String data is left justified with trailing blanks optional. Any displayable (printable) ACSII characters (hexadecimal values between 20 and 7E, inclusive, or ASCII decimal values between 32 and 126), except the defined delimiter characters.

#### **Example:**

|almost any data at all|

### SN - Structured Numeric

Components: <comparator (ST)> ^ <num1 (NM)> ^ <separator/suffix (ST)> ^ <num2 (NM)>

The structured numeric data type is used to unambiguously express numeric clinical results along with qualifications. This enables receiving systems to store the components separately, and facilitates the use of numeric database queries. The corresponding sets of values indicated with the <comparator> and <separator/suffix> components are intended to be the authoritative and complete set of values. If additional values are needed for the <comparator> and <separator/suffix> components, they should be submitted to HL7 for inclusion in the Standard.

If <num1> and <num2> are both non-null, then the separator/suffix must be non-null. If the separator is "-", the data range is inclusive; e.g., <num1> - <num2> defines a range of numbers x, such that: <num1> <=x<= <num2>.

### ID - Coded Value for HL7 Defined Tables

The value of such a field follows the formatting rules for an ST field except that it is drawn from a table of legal values. There shall be an HL7 table number associated with ID data types. Examples of ID fields include religion and gender. This data type should be used only for HL7 tables. The reverse is not true, since in some circumstances, it is more appropriate to use the CE data type for HL7 tables.

### DT - Date

Format: YYYY[MM[DD]]

In prior versions of HL7, this data type was always specified to be in the format YYYYMMDD. In the current and future versions of HL7, the precision of a date may be expressed by limiting the number of digits used with the format specification YYYY[MM[DD]]. Thus, YYYY is used to specify a precision of "year," YYYYMM specifies a precision of "month," and YYYYMMDD specifies a precision of "day."

By site-specific agreement, YYYYMMDD may be used where backwards compatibility must be maintained.

#### **Examples:**

|19880704|  
|199503|

## **XTN - Extended Telecommunication Number**

Components: [NNN] [(999)]999-9999 [X99999] [B99999] [C any text] ^ <telecommunication use code (ID)> ^ <telecommunication equipment type (ID)> ^ <email address (ST)> ^ <country code (NM)> ^ <area/city code (NM)> ^ <phone number (NM)> ^ <extension (NM)> ^ <any text (ST)>

### **Example:**

(415)555-3210^ORN^FX^

## **XPN - Extended Person Name**

Components: <family name (ST)> ^ <given name (ST)> ^ <middle initial or name (ST)> ^ <suffix (e.g., JR or III) (ST)> ^ <prefix (e.g., DR) (ST)> ^ <degree (e.g., MD) (ST)> ^ <name type code (ID)> ^ <name representation code (ID)>

### **Example:**

|Smith^John^J^III^DR^PHD^L|

## **XCN – Extended Composite ID Number and Name**

Components: <ID number (ST)>^<family name (ST)>&<last name prefix (ST)>^<given name(ST)>^<middle initial or name (ST)>^<suffix (e.g., Jr. or III) (ST)>^<prefix (e.g., Dr.) (ST)>^<degree (e.g., MD)(IS)>^<source table (IS)>^<assigning authority (HD)>^<name type code (ID)>^<identifier check digit (ST)>^<codeidentifying the check digit scheme employed (ID)>^<identifier type code (IS)>^<assigning facility ID (HD)>^<name representation code (ID)>

### **Example:**

|1234567891^O'BRIAN^ROBERT^A^DR^MD^OEI|

## **XAD - Extended Address**

Components: <street address (ST)> ^ <other designation (ST)> ^ <city (ST)> ^ <state or province (ST)> ^ <zip or postal code(ST)> ^ <country (ID)> ^ < address type (ID)> ^ <other geographic designation (ST)>^ <county/parish code (IS)> ^ <census tract (IS)>

### **Example:**

|1234 Easy St.^Ste. 123^San Francisco^CA^95123^USA^B^SF^|

## **CWE - Coded with Exceptions**

The most relevant characteristics of the CWE data type (when compared with the characteristics of the CE data type) are the use of versionIDs to convey the version of the coding system, and the introduction of OriginalText to convey the original text that was available to an automated process or a human before a specific code was assigned.

## **CE - Coded Element**

Components: <identifier (ST)> ^ <text (ST)> ^ <name of coding system (ST)> ^ <alternate identifier (ST)> ^ <alternate text (ST)> ^ <name of alternate coding system (ST)>

### **Example:**

|F-11380^CREATENINE^I9^2148-5^CREATENINE^LN|

This data type transmits codes and the text associated with the code. To allow all six components of a CE data type to be valued, the maximum length of this data type must be at least 60.

### **IS - Coded Value for User-Defined Tables**

The value of such a field follows the formatting rules for an ST field except that it is drawn from a site-defined (or user-defined) table of legal values. There shall be an HL7 table number associated with IS data types. An example of an IS field is the *Event reason code* defined in Section 3.3.1.4, "Event reason code." This data type should be used only for user-defined tables. The reverse is not true, since in some circumstances, it is more appropriate to use the CE data type for user-defined tables.

### **HD - Hierarchic Designator**

Components: <namespace ID (IS)> ^ <universal ID (ST)> ^ <universal ID type (ID)>

The HD is designed to be a more powerful application identifier. It is also designed to be used either as a local version of a site-defined application identifier or a publicly-assigned UID. Syntactically, the HD is a group of two application identifiers: one defined by the first component, and one defined by the second and third components.

The HD allows any site to act as an assigning authority (on a local or user-defined basis), even if it technically does not have the right to issue new ID's within an identification scheme. HDs which have defined third components (defined UID types) must be unique within the series of ID's defined by that component.

### **CM - Composite**

A composite is a field that is a combination of other meaningful data fields. Each portion is called a component. The specific components of CM fields are defined within the field descriptions. ***The CM data type is maintained strictly for backward compatibility and may not be used for the definition of new fields.***

Wherever a component of an HL7 field is itself an HL7 data type which contains components, its delimiters are demoted by one. Note that since HL7 delimiters are not recursive, an HL7 data type containing components cannot be a sub-component. When this level of detail is needed, each component of the HL7 data type can be encoded as a separate subcomponent.

## APPENDIX B – VOCABULARIES

### Vocabulary 1 – Sex

HL70001 - Sex (Use in PID-8, NK1-15)

Code	Description
F	Female
M	Male
O	Other
U	Unknown

### Vocabulary 2 – Race

HL70005 - Race [These values are consistent with the OMB Notice of revised categories for collection of race and ethnicity data—the combined format.] (Use in PID-10, NK1-35)

Code	Description
1002-5	American Indian or Alaska Native
2028-9	Asian
2054-5	Black or African-American
2076-8	Native Hawaiian or Other Pacific Islander
2106-3	White
2131-1	Unknown
2186-5	Other Race

### Vocabulary 3 - Ethnicity

HL70189 - Ethnicity [These values are consistent with the OMB Notice of revised categories for collection of race and ethnicity data and with HL7's Version 2.4.] (Use in PID-22, NK1-28)

Code	Description
H	Hispanic or Latino
N	Not Hispanic or Latino
U	Unknown

### Vocabulary 4 – Relationship

HL70063 - Relationship [As defined in HL7's Version 2.4] (Use in NK1-3, IN1-17, IN2-62)

Code	Description
ASC	Associate
BRO	Brother
CGV	Caregiver
CHD	Child
DEP	Handicapped dependent
DOM	Life partner
EMC	Emergency contact
EME	Employee
EMR	Employer

<b>Code</b>	<b>Description</b>
EXF	Extended family
FCH	Foster child
FND	Friend
FTH	Father
GCH	Grandchild
GRD	Guardian
GRP	Grandparent
MGR	Manager
MTH	Mother
NCH	Natural child
NON	None
OAD	Other adult
OTH	Other
OWN	Owner
PAR	Parent
SCH	Stepchild
SEL	Self
SIB	Sibling
SIS	Sister
SPO	Spouse
REL	Relative
TRA	Trainer
UNK	Unknown
WRD	Ward of court

### **Vocabulary 5 - Route of Administration**

**HL70162 - Route of administration** [Only selected values listed] (Use in RXR-1)

<b>Code</b>	<b>Description</b>
ID	Intradermal
IM	Intramuscular
IN	Intranasal
IV	Intravenous
OTH	Other/Miscellaneous
PO	Oral
SC	Subcutaneous

## Vocabulary 6 - Administrative Site

HL70163 - Administrative site [Only selected values listed] (Use in RXR-2)

Code	Description
IN	Intranasal
LAT	Left Anterior Thigh
LA	Left Arm
LD	Left Deltoid
LG	Left Gluteus Medius
LLT	Left Lateral Thigh
LL	Left Leg
LLFA	Left Lower Forearm
LT	Left Thigh
LVL	Left Vastus Lateralis
OTH	Other
PO	Oral
RAT	Right Anterior Thigh
RA	Right Arm
RD	Right Deltoid
RG	Right Gluteus Medius
RLT	Right Lateral Thigh
RL	Right Leg
RLFA	Right Lower Forearm
RT	Right Thigh
RVL	Right Vastus Lateralis
UNK	Unknown

## Vocabulary 7 - Identifier Type

HL70203 - Identifier type (Use in all CX, XCN type codes; including PID-2,3,4,18,21 and RXA-10)

Code	Description
OEI	Order Employee Number
REI	Recorder Employee Number
VEI	Vaccinator Employee Number
AM	American Express
AN	Account Number
ANON	Anonymous Identifier
BRO	Birth Registry Number
DL	Driver's License Number
DN	Doctor's Number
EI	Employee Number
EN	Employer Number
FI	Facility Identifier

<b>Code</b>	<b>Description</b>
GI	Guarantee Internal Identifier
GN	Guarantee External Identifier
LN	License Number
LR	Local Registry ID
MA	Medicaid Number
MC	Medicare Number
MR	Medical Record Number
NET	National Employer Identifier
NH	National Health Plan Identifier
NI	National Unique Individual Identifier
NPI	National Provider Identifier
PI	Patient Internal Identifier
PN	Person Number
PRN	Provider Number
PT	Patient External Identifier
RRI	Railroad Retirement Number
RRI	Regional Registry ID
SL	State License
SR	State Registry ID
SS	Social Security Number
U	Unspecified
UPIN	Medicare/CMS's Universal Physician ID Numbers
VN	Visit Number
VS	VISA
WC	WIC Identifier
XX	Organization Identifier

## Vocabulary 8 - Financial Class

HL70064 - Financial class [*NIP suggested values*] (Use in PV1-20)

<b>Code</b>	<b>Description</b>
V00	VFC eligibility not determined/unknown
V01	Not VFC eligible
V02	VFC eligible - Medicaid/Medicaid Managed Care
V03	VFC eligible - Uninsured
V04	VFC eligible - American Indian/Alaskan Native
V05	VFC eligible - Federally Qualified Health Center Patient (underinsured)
V06	VFC eligible – State-specific eligibility (e.g., S-CHIP plan)
V07	VFC eligibility - Local-specific eligibility

## Vocabulary 9 – Degrees

**HL70360 - Degree** [Selected values suggested by HL7; with NIP-suggested additions—these will be included in HL7 Version 2.5] (Use in all XPN data types, including PID-5, 6, 9)

Code	Description
CNA	Certified Nurse's Assistant
CMA	Certified Medical Assistant
CPNP	Certified Pediatric Nurse Practitioner
DO	Doctor of Osteopathy
FNP	Family Practice Nurse Practitioner
LPN	Licensed Practical Nurse
MD	Doctor of Medicine
MA	Medical Assistant
NP	Nurse Practitioner
PA	Physician Assistant
PharmD	Doctor of Pharmacy
RMA	Registered Medical Assistant
RN	Registered Nurse

## Vocabulary 10 - Action Codes

**HL70323 – Action Codes** (Use in RXA-21)

Code	Description
A	Add
D	Delete
U	Update

## Vocabulary 11 – Yes/No

**HL70136 - Yes/No indicator** (Use in PID-24, 30; PD1-12 ;RXA-21)

Code	Description
Y	Yes
N	No
""<null>	Not obtained (when used by immunization registries as defined in PD1-12)
U	Unknown

## Vocabulary 12 – Patient class

**HL70004 - Patient class** [Values suggested by HL7] (Use in PV1-2)

Code	Description
E	Emergency
I	Inpatient
O	Outpatient
P	Pre-admit
R	Recurring Patient

Code	Description
B	Obstetrics

### Vocabulary 13 - Manufacturers of vaccines

**HL70227 - Manufacturers of vaccines (Code = MVX)** (Use in RXA-17) The table below includes both active and inactive manufacturers of vaccine in the U.S. Inactive MVX codes allow transmission of historical immunization records. Active MVX codes denote that the manufacturer is currently making vaccine for distribution in the U.S. This table can also be found on the CDC website:

<http://www2a.cdc.gov/vaccines/iis/iisstandards/vaccines.asp?rpt=mvx>

MVX Code	Manufacturer Name	Notes	Manufacturer Status
AB	Abbott Laboratories	Includes Ross Products Division, Solvay	Active
ACA	Acambis, Inc.	Acquired by Sanofi in Sept 2008	Inactive
AD	Adams Laboratories, Inc.		Active
AKR	Akorn, Inc.		Active
ALP	Alpha Therapeutic Corporation		Active
AR	Armour	Part of CSL	Inactive
AVB	Aventis Behring L.L.C.	Part of CSL	Inactive
AVI	Aviron	Acquired by MedImmune	Inactive
BA	Baxter Healthcare Corporation – inactive		Inactive
BAH	Baxter Healthcare Corporation	Includes Hyland Immuno, Immuno International AG, and North American Vaccine, Inc./acquired some assets from Alpha Therapeutics	Active
BAY	Bayer Corporation	Bayer Biologicals now owned by Talecris	Inactive
BP	Berna Products		Inactive
BPC	Berna Products Corporation	Includes Swiss Serum and Vaccine Institute Berne	Active
BRR	Barr Laboratories	Subsidiary of Teva Pharmaceuticals	Active
BTP	Biotest Pharmaceuticals Corporation	New owner of NABI HB as of Dec 2007, does NOT replace NABI Biopharmaceuticals in this code list.	Active
CEN	Centeon L.L.C.		Inactive
CHI	Chiron Corporation	Part of Novartis	Inactive
CMP	Celltech Medeva Pharmaceuticals	Part of Novartis	Inactive
CNJ	Cangene Corporation	Purchased by Emergent BioSolutions	Inactive
CON	Connaught	Acquired by Merieux	Inactive
CRU	Crucell	Acquired Berna, now a J&J company	Active

<b>MVX Code</b>	<b>Manufacturer Name</b>	<b>Notes</b>	<b>Manufacturer Status</b>
CSL	bioCSL	CSL Biotherapies renamed to bioCSL	Active
DVC	DynPort Vaccine Company, L.L.C.		Active
EVN	Evans Medical Limited	Part of Novartis	Inactive
GEO	GeoVax Labs, Inc.		Active
GRE	Greer Laboratories, Inc.		Active
GRF	Grifols		Active
IAG	Immuno International AG	Part of Baxter	Inactive
IDB	ID Biomedical		Active
IM	Merieux	Part of Sanofi	Inactive
INT	Intercell Biomedical		Active
IUS	Immuno-U.S., Inc.		Active
JNJ	Johnson and Johnson	Acquired CRUCELL which acquired Berna	Active
JPN	The Research Foundation for Microbial Diseases of Osaka University (BIKEN)		Active
KED	Kedrion Biopharma	Acquired Rho(D) from Ortho	Active
KGC	Korea Green Cross Corporation		Active
LED	Lederle	Became a part of WAL, now owned by Pfizer	Inactive
MA	Massachusetts Public Health Biologic Laboratories		Inactive
MBL	Massachusetts Biologic Laboratories	Formerly Massachusetts Public Health Biologic Laboratories	Active
MED	MedImmune, Inc.	Acquisitions of U.S. Bioscience in 1999 and Aviron in 2002, as well as the integration with Cambridge Antibody Technology and the strategic alignment with new parent company, AstraZeneca, in 2007.	Active
MIL	Miles		Inactive
MIP	Emergent BioDefense Operations Lansing	A unit of Emergent BioSolutions, Bioport renamed. Formerly Michigan Biologic Products Institute.	Active
MSD	Merck & Co., Inc.		Active
NAB	NABI	Formerly North American Biologicals, Inc.	Active
NAV	North American	Part of Baxter	Inactive

<b>MVX Code</b>	<b>Manufacturer Name</b>	<b>Notes</b>	<b>Manufacturer Status</b>
	Vaccine, Inc.		
NOV	Novartis Pharmaceutical Corporation	Includes Chiron, PowderJect Pharmaceuticals, Celltech Medeva Vaccines and Evans Limited, Ciba-Geigy Limited and Sandoz Limited	Active
NVX	Novavax, Inc.		Active
NYB	New York Blood Center		Active
ORT	Ortho-Clinical Diagnostics	A J&J company (formerly Ortho Diagnostic Systems, Inc.)	Active
OTC	Organon Teknika Corporation		Active
OTH	Other manufacturer		Active
PD	Parkedale Pharmaceuticals	Formerly Parke-Davis	Inactive
PFR	Pfizer, Inc.	Includes Wyeth-Lederle Vaccines and Pediatrics, Wyeth Laboratories, Lederle Laboratories, and Praxis Biologics	Active
PWJ	Powderject Pharmaceutical	Part of Novartis	Inactive
PRX	Praxis Biologics	Became a part of WAL, now owned by Pfizer	Inactive
PSC	Protein Sciences		Active
PMC	Sanofi Pasteur	Formerly Aventis Pasteur, Pasteur Merieux Connaught ; includes Connaught Laboratories and Pasteur Merieux. Acquired Acambis.	Active
SCL	Sclavo, Inc.		Active
SI	Swiss Serum and Vaccine Inst.	Part of Berna	Inactive
SKB	GlaxoSmithKline	Includes SmithKline Beecham and Glaxo Wellcome	Active
SOL	Solvay Pharmaceuticals	Part of Abbott	Inactive
TAL	Talecris Biotherapeutics	Includes Bayer Biologicals	Active
UNK	Unknown manufacturer		Active
USA	United States Army Medical Research and Material Command		Active
VXG	VaxGen	Acquired by Emergent BioDefense Operations Lansing, Inc.	Inactive
WA	Wyeth-Ayerst	Became WAL, now owned by Pfizer	Inactive

MVX Code	Manufacturer Name	Notes	Manufacturer Status
WAL	Wyeth	Acquired by Pfizer Oct. 2009	Inactive
ZLB	ZLB Behring	Acquired by CSL	Inactive

#### Vocabulary 14 - Immunization information source

NIP-defined NIP001 - Immunization information source (Use in RXA-9)

Code	Description
00	New Immunization Record
01	Historical Information – source unspecified
02	Historical Information – from other provider
03	Historical Information – from parent’s written record
04	Historical Information – from parent’s recall
05	Historical Information – from other registry
06	Historical Information – from birth certificate
07	Historical Information – from school record
08	Historical Information – from public agency

#### Vocabulary 15 - Contraindications, Precautions, and Immunities

NIP-defined NIP004 - Contraindications, Precautions, and Immunities (Use in OBX-5 when OBX-3 is valued as LOINC® code 30945-0, Vaccination contraindication/precaution)

Code	Description	Explanation
01	Recipient condition - unspecified	
02	Household condition - unspecified	
03	Allergy to baker’s yeast (anaphylactic)	Contraindicates Hep B
04	Allergy to egg ingestion (anaphylactic)	
05	Allergy to gelatin (anaphylactic)	Extreme caution for MMR and Varicella
06	Allergy to neomycin (anaphylactic)	Contraindicates IPV, MMR and Varicella
07	Allergy to streptomycin (anaphylactic)	Contraindicates IPV
08	Allergy to thimerosal (anaphylactic)	
09	Allergy to previous dose of this vaccine or to any of its unlisted vaccine components (anaphylactic)	Contraindicates that vaccine
10	Anaphylactic (life-threatening) reaction of previous dose of this vaccine or any of its components	Contraindicates that vaccine
11	Collapse or shock like state within 48 hours of previous dose of DTP/DTaP	Precaution for DTaP
12	Convulsions (fits, seizures) within 3 days of previous dose of DTP/DTaP	Precaution for DTaP
13	Persistent, inconsolable crying lasting $\geq$ 3 hours	Precaution for DTaP

Code	Description	Explanation
	within 48 hours of previous dose of DTP/DTaP	
14	Current diarrhea, moderate to severe	Contraindicates vaccination temporarily (until illness resolves)
15	Encephalopathy within 7 days of previous dose of DTP or DTaP	Contraindicates DTaP permanently
16	Current fever with moderate-to-severe illness	Contraindicates vaccination temporarily (until illness resolves)
17	Fever of $\geq 40.5^{\circ}\text{C}$ ( $105^{\circ}\text{F}$ ) within 48 hours of previous dose of DTP/DTaP	Precaution for DTaP
18	Guillain-Barré syndrome (GBS) within 6 weeks of previous dose of DTP/DTaP	Precaution for DTaP
21	Current acute illness, moderate to severe (with or without fever) (e.g., diarrhea, otitis media, vomiting)	Contraindicates vaccination temporarily (until illness resolves)
22	Chronic illness (e.g., chronic gastrointestinal disease)	Decide to vaccinate on an individual basis
23	Recent or simultaneous administration of an antibody-containing blood product (immune globulin)	Precaution for MMR and Varicella
24	Immunity: diphtheria	
25	Immunity: Haemophilus influenzae type B (Hib)	
26	Immunity: Hepatitis B	
27	Immunity: Measles	
28	Immunity: Mumps	
29	Immunity: Pertussis	
30	Immunity: Poliovirus	
31	Immunity: Rubella	
32	Immunity: Tetanus	
33	Immunity: Varicella (chicken pox)	
36	Immunodeficiency due to any cause, including HIV (hematologic and solid tumors, congenital immunodeficiency, long-term immunosuppressive therapy, including steroids)	Contraindicates MMR and Varicella
37	Underlying unstable, evolving neurologic disorders, (including seizure disorders, cerebral palsy, and developmental delay)	Precaution for DTaP
38	Otitis media (ear infection) moderate to severe (with or without fever)	Contraindicates vaccination temporarily (until illness resolves)
39	Pregnancy (in recipient)	Contraindicates MMR and Varicella
40	Thrombocytopenia	Precaution for MMR
41	Thrombocytopenic purpura (history)	Precaution for MMR
42	Other contraindication/precaution/immunity not listed (must add text component of the CE field with description)	
43	Unknown (valid only for historical immunizations)	

## Vocabulary 16 CVX - Vaccines Administered

**CVX** The table below includes both active and inactive vaccines. CVX codes for inactive vaccines allow transmission of historical immunization records. Active CVX codes denote vaccines that are currently available in the U.S. For National Drug Codes (NDC), please visit:

<http://www2a.cdc.gov/vaccines/iis/iisstandards/vaccines.asp?rpt=ndc>

CVX Code	Short Description	Full Vaccine Name	Vaccine Status	Notes
143	Adenovirus types 4 and 7	Adenovirus, type 4 and type 7, live, oral	Active	This vaccine is administered as 2 tablets.
54	Adenovirus, type 4	Adenovirus vaccine, type 4, live, oral	Inactive	
55	Adenovirus, type 7	Adenovirus vaccine, type 7, live, oral	Inactive	
82	Adenovirus, unspecified formulation	Adenovirus vaccine, unspecified	Inactive	Use for reporting historical doses where the formulation is unknown.
24	Anthrax	Anthrax vaccine	Active	
801	AS03 Adjuvant	AS03 Adjuvant	Active	This is the adjuvant that is packaged with H5N1 vaccine, adjuvanted
19	BCG	Bacillus Calmette-Guerin vaccine	Active	
27	Botulinum antitoxin	Botulinum antitoxin	Active	
26	Cholera	Cholera vaccine	Inactive	
29	CMVIG	Cytomegalovirus immune globulin, intravenous	Active	
56	Dengue fever	Dengue fever vaccine	Never Active	
12	Diphtheria antitoxin	Diphtheria antitoxin	Active	
28	DT (pediatric)	Diphtheria and tetanus toxoids, adsorbed for pediatric use	Active	
20	DTaP	Diphtheria, tetanus toxoids and acellular pertussis vaccine	Active	
106	DTaP, 5 pertussis antigens	Diphtheria, tetanus toxoids and acellular pertussis vaccine, 5 pertussis antigens	Active	
107	DTaP, unspecified formulation	Diphtheria, tetanus toxoids and acellular pertussis vaccine, unspecified formulation	Inactive	Use for reporting historical doses where the formulation is unknown.
146	DTaP-IPV-Hib-HepB	Diphtheria and tetanus	Pending	Note that this

CVX Code	Short Description	Full Vaccine Name	Vaccine Status	Notes
		toxoids and acellular pertussis adsorbed, inactivated poliovirus, Haemophilus b conjugate (meningococcal outer membrane protein complex), and hepatitis B (recombinant) vaccine		vaccine is different than CVX 132.
110	DTaP-HepB-IPV	DTaP-hepatitis B and poliovirus vaccine	Active	
50	DTaP-Hib	DTaP- <i>Haemophilus influenzae</i> type b conjugate vaccine	Active	
120	DTaP-Hib-IPV	Diphtheria, tetanus toxoids and acellular pertussis vaccine, <i>Haemophilus influenzae</i> type b conjugate, and poliovirus vaccine, inactivated (DTaP-Hib-IPV)	Active	
130	DTaP-IPV	Diphtheria, tetanus toxoids and acellular pertussis vaccine, and poliovirus vaccine, inactivated	Active	
132	DTaP-IPV-Hib-HepB, historical	Historical record of vaccine containing *diphtheria, tetanus toxoids and acellular pertussis, *poliovirus, inactivated, *Haemophilus influenzae type b conjugate, *Hepatitis B (DTaP-Hib-IPV)	Inactive	This is not the same as CVX 146, hexavalent vaccine.
01	DTP	Diphtheria, tetanus toxoids and pertussis vaccine	Inactive	
22	DTP-Hib	DTP- <i>Haemophilus influenzae</i> type b conjugate vaccine	Inactive	
102	DTaP/DTP-Hib-Hep B	DTP- <i>Haemophilus influenzae</i> type b conjugate and hepatitis b vaccine	Inactive	This non-US vaccine contained DTP prior to 2007 and now contains DTaP
57	Hantavirus	Hantavirus vaccine	Never Active	
30	HBIG	Hepatitis B immune globulin	Active	
52	Hep A, adult	Hepatitis A vaccine, adult dosage	Active	
154	Hep A, IG	Hepatitis A immune globulin	Active	

CVX Code	Short Description	Full Vaccine Name	Vaccine Status	Notes
83	Hep A, ped/adol, 2 dose	Hepatitis A vaccine, pediatric/adolescent dosage, 2 dose schedule	Active	
84	Hep A, ped/adol, 3 dose	Hepatitis A vaccine, pediatric/adolescent dosage, 3 dose schedule	Inactive	This vaccine formulation is inactive and should not be used except to record historical vaccinations with this formulation.
31	Hep A, pediatric, unspecified formulation	Hepatitis A vaccine, pediatric dosage, unspecified formulation	Inactive	Do NOT use this code. If formulation is unknown, use CVX 85. There is only one formulation of Hep A, peds.
85	Hep A, unspecified formulation	Hepatitis A vaccine, unspecified formulation	Inactive	Use for reporting historical doses where the formulation is unknown
104	Hep A-Hep B	Hepatitis A and hepatitis B vaccine	Active	
08	Hep B, adolescent or pediatric	Hepatitis B vaccine, pediatric or pediatric/adolescent dosage	Active	This code applies to any standard pediatric formulation of Hepatitis B vaccine. It should not be used for the 2-dose Hep B schedule for adolescents (11-15 year olds). It requires Merck's Recombivax HB® adult formulation. Use code 43 for that vaccine.
42	Hep B, adolescent/high risk infant	Hepatitis B, adolescent/high risk infant dosage	Inactive	As of August 27, 1998, Merck ceased distribution of their adolescent/high risk infant Hep B vaccine. This code should only be used for reporting historical doses. For current administration of Hep B vaccine,

CVX Code	Short Description	Full Vaccine Name	Vaccine Status	Notes
				pediatric/adolescent dosage, use code 08.
43	Hep B, adult	Hepatitis B vaccine, adult dosage	Active	As of September 1999, a 2-dose Hep B schedule for adolescents (11-15 year olds) was FDA-approved for Merck's Recombivax HB® adult formulation. Use code 43 for the 2-dose. This code should be used for any use of standard adult formulation of Hep B vaccine.
44	Hep B, dialysis	Hepatitis B vaccine, dialysis patient dosage	Active	
45	Hep B, unspecified formulation	Hepatitis B vaccine, unspecified formulation	Inactive	Use for reporting historical doses where the formulation is unknown.
58	Hep C	Hepatitis C vaccine	Never Active	
59	Hep E	Hepatitis E vaccine	Never Active	
60	Herpes simplex 2	Herpes simplex virus, type 2 vaccine	Never Active	
47	Hib (HbOC)	<i>Haemophilus influenzae</i> type b vaccine, HbOC conjugate	Inactive	
46	Hib (PRP-D)	<i>Haemophilus influenzae</i> type b vaccine, PRP-D conjugate	Inactive	
49	Hib (PRP-OMP)	<i>Haemophilus influenzae</i> type b vaccine, PRP-OMP conjugate	Active	
48	Hib (PRP-T)	<i>Haemophilus influenzae</i> type b vaccine, PRP-T conjugate	Active	
17	Hib, unspecified formulation	<i>Haemophilus influenzae</i> type b vaccine, conjugate, unspecified formulation	Inactive	
51	Hib-Hep B	<i>Haemophilus influenzae</i> type b conjugate and Hepatitis B vaccine	Active	

CVX Code	Short Description	Full Vaccine Name	Vaccine Status	Notes
61	HIV	Human immunodeficiency virus vaccine	Never Active	
165	HPV9	Human Papillomavirus 9-valent vaccine	Active	
118	HPV, bivalent	Human Papillomavirus vaccine, bivalent	Active	
62	HPV, quadrivalent	Human Papillomavirus vaccine, quadrivalent	Active	
137	HPV, unspecified formulation	HPV, unspecified formulation	Inactive	Use for reporting historical doses where the formulation is unknown.
86	IG	Immune globulin, intramuscular	Active	
14	IG, unspecified formulation	Immune globulin, unspecified formulation	Inactive	
87	IGIV	Immune globulin, intravenous	Active	
123	Influenza, H5N1-1203	Influenza virus vaccine, H5N1, A/Vietnam/1203/2004 (national stockpile)	Inactive	
135	Influenza, high dose seasonal	Influenza, high dose seasonal, preservative-free	Active	
153	Influenza, injectable, MDCK, preservative free	Influenza, injectable, Madin Darby Canine Kidney, preservative free	Active	
151	influenza nasal, unspecified formulation	influenza nasal, unspecified formulation	Inactive	Use only for reporting historical doses where the formulation is unknown.
158	Influenza, injectable, quadrivalent	Influenza, injectable, quadrivalent, contains preservative	Active	New in 2013, IIV4
161	Influenza, injectable, quadrivalent, preservative free, pediatric	Influenza, injectable, quadrivalent, preservative free, pediatric	Active	
150	Influenza, injectable, quadrivalent, preservative free	Influenza, injectable, quadrivalent, preservative free	Active	New in 2012. IIV4
166	Influenza, intradermal, quadrivalent, preservative free	Influenza, intradermal, quadrivalent, preservative free, injectable	Active	
111	Influenza, live, intranasal	Influenza virus vaccine, live, attenuated, for intranasal use	Active	Seasonal influenza
149	Influenza, live, intranasal,	Influenza, live, intranasal,	Active	New in 2012

CVX Code	Short Description	Full Vaccine Name	Vaccine Status	Notes
	quadrivalent	quadrivalent		
155	influenza, recombinant, injectable, preservative free	Seasonal, trivalent, recombinant, injectable influenza vaccine, preservative free	Active	
141	Influenza, seasonal, injectable	Influenza, seasonal, injectable	Active	This is one of two codes replacing CVX 15, which is retired.
140	Influenza, seasonal, injectable, preservative-free	Influenza, seasonal, injectable, preservative-free	Active	This vaccine code is one of two which replace CVX 15, influenza, split virus.
144	Influenza, seasonal, intradermal, preservative-free	Seasonal influenza, Intradermal, preservative-free	Active	
15	Influenza, split (incl. purified surface antigen)	Influenza virus vaccine, split virus (incl. purified surface antigen) – retired CODE	Inactive	This code is retired. It may still be found in older immunization records. It included both preservative-free and non preservative-free.
88	Influenza, unspecified formulation	Influenza virus vaccine, unspecified formulation	Inactive	Use only for reporting historical doses where the formulation is unknown.
16	Influenza, whole	Influenza virus vaccine, whole virus	Inactive	
160	Influenza A monovalent (H5N1), ADJUVANTED-2013	Influenza A monovalent (H5N1), adjuvanted, National stockpile 2013	Active	Approved by FDA 2013, adjuvant is mixed at point of administration.
10	IPV	Poliovirus vaccine, inactivated	Active	
134	Japanese Encephalitis IM	Japanese Encephalitis vaccine for intramuscular administration	Active	
39	Japanese Encephalitis SC	Japanese Encephalitis Vaccine SC	Active	
129	Japanese Encephalitis, unspecified formulation	Japanese Encephalitis Vaccine, unspecified	Inactive	Use only for reporting historical doses where the formulation is unknown.
63	Junin virus	Junin virus vaccine	Never Active	

CVX Code	Short Description	Full Vaccine Name	Vaccine Status	Notes
64	Leishmaniasis	Leishmaniasis vaccine	Never Active	
65	Leprosy	Leprosy vaccine	Never Active	
66	Lyme disease	Lyme disease vaccine	Inactive	
04	M/R	Measles and rubella virus vaccine	Inactive	
67	Malaria	Malaria vaccine	Never Active	
05	Measles	Measles virus vaccine	Inactive	
68	Melanoma	Melanoma vaccine	Never Active	
163	Meningococcal B, OMV	Meningococcal B vaccine, recombinant, OMV, adjuvanted	Active	
162	Meningococcal B, recombinant	Meningococcal B vaccine, fully recombinant	Active	
164	Meningococcal B, unspecified	Meningococcal B, unspecified formulation	Inactive	
103	Meningococcal C conjugate	Meningococcal C conjugate vaccine	Inactive	
148	Meningococcal C/Y – Hib PRP	Meningococcal groups C and Y and Haemophilus b Tetanus Toxoid conjugate vaccine	Active	
147	Meningococcal MCV4, unspecified formulation	Meningococcal, MCV4, unspecified formulation (groups A, C, Y and W-135)	Inactive	This CVX should only be used for historical doses of meningococcal conjugate vaccine where the formulation is unknown (oligosaccharide vs. polysaccharide). It is not the same as CVX 108, meningococcal, unspecified formulation.
136	Meningococcal MCV4O	Meningococcal oligosaccharide (groups A, C, Y and W-135) diphtheria toxoid conjugate vaccine (MCV4O)	Active	
114	Meningococcal MCV4P	Meningococcal polysaccharide (groups A, C, Y and W-135) diphtheria toxoid conjugate vaccine	Active	

CVX Code	Short Description	Full Vaccine Name	Vaccine Status	Notes
		(MCV4P)		
32	Meningococcal MPSV4	Meningococcal polysaccharide vaccine (MPSV4)	Active	
108	Meningococcal, unspecified formulation	Meningococcal vaccine, unspecified formulation	Inactive	Use only for reporting historical doses where the formulation is unknown.
03	MMR	Measles, mumps and rubella virus vaccine	Active	
94	MMRV	Measles, mumps, rubella, and varicella virus vaccine	Active	
07	Mumps	Mumps virus vaccine	Active	
127	Novel Influenza-H1N1-09	Novel influenza-H1N1-09, injectable	Inactive	
128	Novel influenza-H1N1-09, all formulations	Novel influenza-H1N1-09, all formulations	Inactive	This code is used whenever the actual formulation is not determined or when aggregating all Novel H1N1 Influenza-09 immunizations for reporting to CRA. It should not be used for seasonal influenza vaccine that is not otherwise specified. (NOS)
125	Novel influenza-H1N1-09, nasal	Novel influenza-H1N1-09, live virus for nasal administration	Inactive	
126	Novel influenza-H1N1-09, preservative-free	Novel influenza-H1N1-09, preservative-free, injectable	Inactive	
02	OPV	Poliovirus vaccine, live, oral	Inactive	
69	Parainfluenza-3	Parainfluenza-3 virus vaccine	Inactive	
11	Pertussis	Pertussis vaccine	Inactive	
23	Plague	Plague vaccine	Active	
133	Pneumococcal conjugate PCV13	Pneumococcal conjugate vaccine, 13 valent	Active	
100	Pneumococcal conjugate PCV7	Pneumococcal conjugate vaccine, 7 valent	Inactive	
33	Pneumococcal polysaccharide PPV23	Pneumococcal polysaccharide vaccine, 23 valent	Active	

CVX Code	Short Description	Full Vaccine Name	Vaccine Status	Notes
109	Pneumococcal, unspecified formulation	Pneumococcal vaccine, unspecified formulation	Inactive	Use only for reporting historical doses where the formulation is unknown.
89	Polio, unspecified formulation	Poliovirus vaccine, unspecified formulation	Inactive	
70	Q fever	Q fever vaccine	Never Active	
40	Rabies, intradermal injection	Rabies vaccine, for intradermal injection	Active	
18	Rabies, intramuscular injection	Rabies vaccine, for intramuscular injection	Active	
90	Rabies, unspecified formulation	Rabies vaccine, unspecified formulation	Inactive	
72	Rheumatic fever	Rheumatic fever vaccine	Never Active	
73	Rift Valley fever	Rift Valley fever vaccine	Never Active	
34	RIG	Rabies immune globulin	Active	
119	Rotavirus, monovalent	Rotavirus, live, monovalent vaccine	Active	
116	Rotavirus, pentavalent	Rotavirus, live, pentavalent vaccine	Active	
74	Rotavirus, tetravalent	Rotavirus, live, tetravalent vaccine	Inactive	
122	Rotavirus, unspecified formulation	Rotavirus vaccine, unspecified formulation	Inactive	
71	RSV-IGIV	Respiratory syncytial virus immune globulin, intravenous	Active	
93	RSV-MAb	Respiratory syncytial virus monoclonal antibody (palivizumab), intramuscular	Active	
145	RSV-MAb (new)	Respiratory syncytial virus monoclonal antibody (motavizumab), intramuscular	Pending	
06	Rubella	Rubella virus vaccine	Active	
38	Rubella/mumps	Rubella and mumps virus vaccine	Inactive	
76	Staphylococcus bacterio lysate	Staphylococcus bacteriophage lysate	Inactive	
138	Td (adult)	Tetanus and diphtheria toxoids, not adsorbed, for adult use	Active	Note that this Td is not adsorbed.
113	Td (adult) preservative-free	Tetanus and diphtheria toxoids, adsorbed, preservative-free, for adult	Active	

CVX Code	Short Description	Full Vaccine Name	Vaccine Status	Notes
		use		
09	Td (adult), adsorbed	Tetanus and diphtheria toxoids, adsorbed, for adult use	Active	Note that this vaccine name has changed. See also Td (adult). It is not adsorbed.
139	Td (adult), unspecified formulation	Td (adult) unspecified formulation	Inactive	Use only for reporting historical doses where the formulation is unknown.
115	Tdap	Tetanus toxoid, reduced diphtheria toxoid, and acellular pertussis vaccine, adsorbed	Active	
35	Tetanus toxoid, adsorbed	Tetanus toxoid, adsorbed	Active	
142	Tetanus toxoid, not adsorbed	Tetanus toxoid, not adsorbed	Active	
112	Tetanus toxoid, unspecified formulation	Tetanus toxoid, unspecified formulation	Inactive	
77	Tick-borne encephalitis	Tick-borne encephalitis vaccine	Inactive	
13	TIG	Tetanus immune globulin	Active	
98	TST, unspecified formulation	Tuberculin skin test, unspecified formulation	Active	TB skin test is not a vaccine.
95	TST-OT tine test	Tuberculin skin test, old tuberculin, multipuncture device	Active	TB skin test is not a vaccine.
96	TST-PPD intradermal	Tuberculin skin test, purified protein derivative solution, intradermal	Active	TB skin test is not a vaccine.
97	TST-PPD tine test	Tuberculin skin test, purified protein derivative, multipuncture device	Active	TB skin test is not a vaccine.
78	Tularemia vaccine	Tularemia vaccine	Inactive	
25	Typhoid, oral	Typhoid vaccine, live, oral	Active	
41	Typhoid, parenteral	Typhoid vaccine, parenteral, other than acetone-killed, dried	Active	
53	Typhoid, parenteral, AKD (U.S. military)	Typhoid vaccine, parenteral, acetone-killed, dried (U.S. military)	Active	
91	Typhoid, unspecified formulation	Typhoid vaccine, unspecified formulation	Inactive	
101	Typhoid, ViCPs	Typhoid Vi capsular polysaccharide vaccine	Active	
131	Typhus, historical	Historical record of a typhus	Inactive	

CVX Code	Short Description	Full Vaccine Name	Vaccine Status	Notes
		vaccination		
75	Vaccinia (smallpox)	Vaccinia (smallpox) vaccine	Active	
105	Vaccinia (smallpox) diluted	Vaccinia (smallpox) vaccine, diluted	Inactive	
79	Vaccinia immune globulin	Vaccinia immune globulin	Active	
21	Varicella	Varicella virus vaccine	Active	
81	VEE, inactivated	Venezuelan equine encephalitis, inactivated	Inactive	
80	VEE, live	Venezuelan equine encephalitis, live, attenuated	Inactive	
92	VEE, unspecified formulation	Venezuelan equine encephalitis vaccine, unspecified formulation	Inactive	
36	VZIG	Varicella zoster immune globulin	Active	
117	VZIG (IND)	Varicella zoster immune globulin (Investigational New Drug)	Inactive	
37	Yellow fever	Yellow fever vaccine	Active	
121	Zoster	Zoster vaccine, live	Active	
998	No vaccine administered	No vaccine administered	Inactive	Code 998 was added for use in VXU HL7 messages where the OBX segment is nested with the RXA segment, but the message does not contain information about a vaccine administration.
99	RESERVED – Do not use	RESERVED – Do not use	Inactive	Code 99 will not be used in this table to avoid confusion with code 999.
999	Unknown	Unknown vaccine or immune globulin	Inactive	This CVX code has little utility and should not be used.

### Vocabulary 17 – CPT Codes

**CPT** The table below cross-references Current Procedural Terminology (CPT) codes that are related to vaccines, toxoids and immune globulins with their corresponding CVX codes. Both active and inactive CPT codes are included.

CPT Code	CPT Description	CPT Code Status	CVX Code
90281	Immune globulin (IG), human, for intramuscular use	Active	86

<b>CPT Code</b>	<b>CPT Description</b>	<b>CPT Code Status</b>	<b>CVX Code</b>
90283	Immune globulin (IGIV), human, for intravenous use	Active	87
90287	Botulinum antitoxin, equine, any route	Active	27
90291	Cytomegalovirus immune globulin (CMV-IGIV), human, for intravenous use	Active	29
90296	Diphtheria antitoxin, equine, any route	Active	12
90371	Hepatitis B immune globulin (HBIG), human, for intramuscular use	Active	30
90375	Rabies immune globulin (RIG), human, for intramuscular and/or subcutaneous use	Active	34
90376	Rabies immune globulin, heat-treated (RIG-HT), human, for intramuscular and/or subcutaneous use	Active	34
90378	Respiratory syncytial virus immune globulin (RSV-IgIM), for intramuscular use, 50 mg, each	Active	93
90379	Respiratory syncytial virus immune globulin (RSV-IGIV), human, for intravenous use	Active	71
90389	Tetanus immune globulin (TIG), human, for intramuscular use	Active	13
90393	Vaccinia immune globulin, human, for intramuscular use	Active	79
90396	Varicella-zoster immune globulin, human, for intramuscular use	Active	36
90470	H1N1 immunization administration (intramuscular, intranasal), including counseling when performed	Inactive	128
90476	Adenovirus vaccine, type 4, live, for oral use	Active	54
90477	Adenovirus vaccine, type 7, live, for oral use	Active	55
90581	Anthrax vaccine, for subcutaneous use	Active	24
90585	Bacillus Calmette-Guerin vaccine (BCG) for tuberculosis, live, for percutaneous use	Active	19
90630	Influenza virus vaccine, quadrivalent (IIV4), split virus, preservative free, for intradermal use	Active	166
90632	Hepatitis A vaccine, adult dosage, for intramuscular use	Active	52
90633	Hepatitis A vaccine, pediatric/adolescent dosage-2 dose schedule, for intramuscular use	Active	83
90634	Hepatitis A vaccine, pediatric/adolescent dosage-3 dose schedule, for intramuscular use	Active	84
90636	Hepatitis A and hepatitis B (HepA-HepB), adult dosage, for intramuscular use	Active	104
90644	Meningococcal groups C and Y and Haemophilus b Tetanus Toxoid conjugate vaccine	Active	148
90645	<i>Haemophilus influenzae</i> type b vaccine (Hib), HbOC conjugate (4 dose schedule), for intramuscular use	Active	47
90646	<i>Haemophilus influenzae</i> type b vaccine (Hib), PRP-D conjugate, for booster use only, intramuscular use	Active	46
90647	<i>Haemophilus influenzae</i> type b vaccine (Hib), PRP-OMP conjugate (3 dose schedule), for intramuscular use	Active	49
90648	<i>Haemophilus influenzae</i> type b vaccine (Hib), PRP-T conjugate (4 dose schedule), for intramuscular use	Active	48
90649	Human Papillomavirus (HPV) vaccine, types 6, 11, 16, 18 (quadrivalent), 3 dose schedule, for intramuscular use	Active	62

<b>CPT Code</b>	<b>CPT Description</b>	<b>CPT Code Status</b>	<b>CVX Code</b>
90650	Human Papillomavirus (HPV) vaccine, types 16, 18 (bivalent), 3 dose schedule, for intramuscular use	Active	118
90654	Influenza virus vaccine, split virus, preservative free, for Intradermal use	Active	144
90655	Influenza virus vaccine, split virus, preservative free, for children 6-35 months of age, for intramuscular use	Active	140
90656	Influenza virus vaccine, split virus, preservative free, for use in individuals 3 years of age and above, for intramuscular use	Active	140
90657	Influenza virus vaccine, split virus, for children 6-35 months of age, for intramuscular use	Active	141
90658	Influenza virus vaccine, split virus, for use in individuals 3 years of age and above, for intramuscular use	Active	141
90659	Influenza virus vaccine, whole virus, for intramuscular or jet injection use	Inactive	16
90660	Influenza virus vaccine, live, for intranasal use	Active	111
90661	Influenza virus vaccine, derived from cell cultures, subunit, preservative and antibiotic free, for intramuscular use	Active	153
90662	Influenza virus vaccine, split virus, preservative free, enhanced immunogenicity via increased antigen content, for intramuscular use	Active	135
90663	Influenza virus vaccine, pandemic formulation, H1N1	Inactive	128
90664	Influenza virus vaccine, pandemic formulation, live, for intranasal use	Inactive	125
90665	Lyme disease vaccine, adult dosage, for intramuscular use	Active	66
90666	Influenza virus vaccine, pandemic formulation, split virus, preservative free, for intramuscular use	Inactive	126
90668	Influenza virus vaccine, pandemic formulation, split virus, for intramuscular use	Inactive	127
90669	Pneumococcal conjugate vaccine, polyvalent, for children under five years, for intramuscular use	Active	100
90670	Pneumococcal conjugate vaccine, 13 valent, for intramuscular use	Active	133
90672	Influenza virus vaccine, quadrivalent, live, for intranasal use	Active	149
90673	Influenza virus vaccine, trivalent, derived from recombinant DNA (RIV3), hemagglutinin (HA) protein only, preservative and antibiotic free, for intramuscular use	Active	155
90675	Rabies vaccine, for intramuscular use	Active	18
90676	Rabies vaccine, for intradermal use	Active	40
90680	Rotavirus vaccine, pentavalent, 3 dose schedule, live, for oral use	Active	116
90681	Rotavirus vaccine, human, attenuated, 2 dose schedule, live, for oral use	Active	119
90685	Influenza virus vaccine, quadrivalent, split virus, preservative free, when administered to children 6-35 months of age, for intramuscular use	Active	161

<b>CPT Code</b>	<b>CPT Description</b>	<b>CPT Code Status</b>	<b>CVX Code</b>
90686	Influenza virus vaccine, quadrivalent, split virus, preservative free, when administered to individuals 3 years of age and older, for intramuscular use	Active	150
90687	Influenza virus vaccine, quadrivalent, split virus, when administered to children 6-35 months of age, for intramuscular use	Active	158
90688	Influenza virus vaccine, quadrivalent, split virus, when administered to individuals 3 years of age and older, for intramuscular use	Active	158
90690	Typhoid vaccine, live, oral	Active	25
90691	Typhoid vaccine, Vi capsular polysaccharide (ViCPs), for intramuscular use	Active	101
90692	Typhoid vaccine, heat- and phenol-inactivated (H-P), for subcutaneous or intradermal use	Active	41
90693	Typhoid vaccine, acetone-killed, dried (AKD), for subcutaneous use (U.S. military)	Active	53
90696	Diphtheria, tetanus toxoids, acellular pertussis vaccine and poliovirus vaccine, inactivated (DTaP-IPV), when administered to children 4 years through 6 years of age, for intramuscular use	Active	130
90698	Diphtheria, tetanus toxoids, and acellular pertussis vaccine, <i>Haemophilus influenzae</i> type b, and poliovirus vaccine, inactivated (DTaP - Hib - IPV), for intramuscular use	Active	120
90700	Diphtheria, tetanus toxoids, and acellular pertussis vaccine (DTaP), for use in individuals younger than seven years, for intramuscular use	Active	20
90700	Diphtheria, tetanus toxoids, and acellular pertussis vaccine (DTaP), 5 pertussis antigens, for use in individuals younger than seven years, for intramuscular use	Active	106
90701	Diphtheria, tetanus toxoids, and whole cell pertussis vaccine (DTP), for intramuscular use	Active	01
90702	Diphtheria and tetanus toxoids (DT) adsorbed for use in individuals younger than seven years, for intramuscular use	Active	28
90703	Tetanus toxoid adsorbed, for intramuscular use	Active	35
90704	Mumps virus vaccine, live, for subcutaneous use	Active	07
90705	Measles virus vaccine, live, for subcutaneous use	Active	05
90706	Rubella virus vaccine, live, for subcutaneous use	Active	06
90707	Measles, mumps and rubella virus vaccine (MMR), live, for subcutaneous use	Active	03
90708	Measles and rubella virus vaccine, live, for subcutaneous use	Active	04
90710	Measles, mumps, rubella, and varicella vaccine (MMRV), live, for subcutaneous use	Active	94
90712	Poliovirus vaccine, (any type(s)) (OPV), live, for oral use	Active	02
90713	Poliovirus vaccine, inactivated, (IPV), for subcutaneous or intramuscular use	Active	10
90714	Tetanus and diphtheria toxoids (Td) adsorbed, preservative free, for use in individuals seven years or older, for	Active – Beginning	113

CPT Code	CPT Description	CPT Code Status	CVX Code
	intramuscular use	in 2005, this CPT code maps to Td preservative free.	
90714	Typhoid vaccine	Inactive – This CPT code has been reused for Td preservative free.	91
90715	Tetanus, diphtheria toxoids and acellular pertussis vaccine (Tdap), for use in individuals 7 years or older, for intramuscular use	Active	115
90716	Varicella virus vaccine, live, for subcutaneous use	Active	21
90717	Yellow fever vaccine, live, for subcutaneous use	Active	37
90718	Tetanus and diphtheria toxoids (Td) adsorbed for use in individuals seven years or older, for intramuscular use	Active	09
90720	Diphtheria, tetanus toxoids, and whole cell pertussis vaccine and <i>Haemophilus influenzae</i> type b vaccine (DTP-Hib), for intramuscular use	Active	22
90721	Diphtheria, tetanus toxoids, and acellular pertussis vaccine and <i>Haemophilus influenzae</i> type b vaccine (DTaP-Hib), for intramuscular use	Active	50
90723	Diphtheria, tetanus toxoids, acellular pertussis vaccine, Hepatitis B, and poliovirus vaccine, inactivated (DTaP-HepB-IPV), for intramuscular use	Active	110
90724	Influenza virus vaccine	Inactive	88
90725	Cholera vaccine for injectable use	Active	26
90726	Rabies vaccine	Inactive	90
90727	Plague vaccine, for intramuscular use	Active	23
90728	BCG vaccine	Inactive	19
90730	Hepatitis A vaccine	Inactive	85
90731	Hepatitis B vaccine	Inactive	45
90732	Pneumococcal polysaccharide vaccine, 23-valent, adult or immunosuppressed patient dosage, for use in individuals 2 years or older, for subcutaneous or intramuscular use	Active	33
90733	Meningococcal polysaccharide vaccine (any group(s)), for subcutaneous use	Active	32
90734	Meningococcal conjugate vaccine, serogroups A, C, Y and W-135 (tetraivalent), for intramuscular use – MCV4O	Active	136
90734	Meningococcal conjugate vaccine, serogroups A, C, Y and W-135 (tetraivalent), for intramuscular use – MCV4P	Active	114
90735	Japanese encephalitis virus vaccine, for subcutaneous use	Active	39
90736	Zoster (shingles) vaccine, live, for subcutaneous injection	Active	121
90737	<i>Haemophilus influenzae</i> type b – unspecified	Inactive	17

CPT Code	CPT Description	CPT Code Status	CVX Code
90738	Japanese encephalitis virus vaccine, inactivated, for intramuscular use	Active	134
90740	Hepatitis B vaccine, dialysis or immunosuppressed patient dosage (3 dose schedule), for intramuscular use	Active	44
90741	Immunization, passive; immune serum globulin, human (ISG) - Inactive	Inactive	14
90743	Hepatitis B vaccine, adolescent (2 dose schedule), for intramuscular use	Active	43
90744	Hepatitis B vaccine, pediatric/adolescent dosage (3 dose schedule), for intramuscular use	Active	08
90745	Hepatitis B vaccine, adolescent/high risk infant dosage, for intramuscular use	Inactive	42
90746	Hepatitis B vaccine, adult dosage, for intramuscular use	Active	43
90747	Hepatitis B vaccine, dialysis or immunosuppressed patient dosage (4 dose schedule), for intramuscular use	Active	44
90748	Hepatitis B and <i>Haemophilus influenzae</i> type b vaccine (HepB-Hib), for intramuscular use	Active	51

### Vocabulary 18 - Reactions

**State defined CO008 – Event Reactions** (Use in OBX-5 when OBX-3 is valued as LOINC® code 31044-1, Reaction)

Code	Description
PERTCONT	Pertussis allergic reaction
TETCONT	Tetanus allergic reaction
HYPOTON	Hypotonic-hyporesponsive collapse within 48 hours of immunization
SEIZURE	Seizure occurring within 3 days of immunization
CRYING	Persistent crying lasting $\geq$ 3 hours within 48 hours of immunization
FEVER105	Temperature $\geq$ 105°F (40.5°C) within 48 hours of immunization

### Vocabulary 19 - Client Consequences

**NIP-defined NIP005 – Event Consequences** (Use in OBX-5 when OBX-3 is valued as LOINC® code 30949-2, Vaccination Adverse Event Outcome)

Code	Description
D	Patient died
L	Life threatening illness
E	Required emergency room/doctor visit
H	Required hospitalization
P	Resulted in prolongation of hospitalization
J	Resulted in permanent disability
O	None of the above

## Vocabulary 20 – Priority Group Category

Use in OBX5

Numeric Code	Value Code	Short Name	Valid Date Range for Code	Description
134	HNST1	Homeland and nations security, Tier 1	09/2008-	Contains deployed and mission critical personnel
802	HNST2	Homeland and nations security, Tier 2	09/2008-	Contains essential support & sustainment personnel, intelligence services, border protection personnel, National Guard personnel, and other domestic national security personnel
127	HNST3	Homeland and nations security, Tier 3	09/2008-	Contains other active duty and essential support
373	HCCSST1	Health care and community support services, Tier 1	09/2008-	Contains public health personnel, inpatient health care providers, outpatient and home health providers, and health care providers in long-term care facilities
254	HCCSST2	Health care and community support services, Tier 2	09/2008-	Contains community support and emergency management
511	HCCSST3	Health care and community support services, Tier 3	09/2008-	Contains other important health care personnel
420	CIT1	Critical Infrastructure, Tier 1	09/2008-	Contains emergency medical service personnel, law enforcement personnel, fire services personnel, manufacturers of pandemic vaccine & antivirals, and key government leaders
536	CIT2	Critical Infrastructure, Tier 2	09/2008-	Contains electricity sector personnel, natural gas personnel, communications personnel, water sector personnel, and critical government personnel
550	CIT3	Critical Infrastructure, Tier 3	09/2008-	Contains transportation sector personnel, food and agriculture sector personnel, banking and finance personnel, pharmaceutical sector personnel, chemical sector personnel, oil sector personnel, postal and shipping personnel, and other important government personnel
816	GPT1	General population, Tier 1	09/2008-	Contains pregnant women and infants and toddlers 6 - 35 months old

<b>Numeric Code</b>	<b>Value Code</b>	<b>Short Name</b>	<b>Valid Date Range for Code</b>	<b>Description</b>
823	GPT2	General population, Tier 2	09/2008-	Contains household contacts of infants < 6 months and children 3 - 18 years with high risk conditions
603	GPT3	General population, Tier 3	09/2008-	Contains children 3 - 18 years without high risk
995	GPT4	General population, Tier 4	09/2008-	Contains persons 19 - 64 with high risk conditions and persons > 65 years old
468	GPT5	General population, Tier 5	09/2008-	Contains healthy adults 19 - 64 years old

## Vocabulary 21 - Insurers

CO0009 – Numeric Code

CO0010 – Alpha Code

<b>Numeric Code</b>	<b>Alpha Code</b>	<b>Insurance Company</b>
9	AETNA	AETNA
398	AIG	AIG INSURANCE
399	ALLIA	ALLIANCE
14	ALLST	ALLSTATE INSURANCE CO
20	AMFAM	AMERICAN FAMILY INSURANCE
25	AMPW	AMERICAN POSTAL WORK
452	AMERI	AMERIHEALTH NEW JERSEY
33	ANTHE	ANTHEM BLUE CROSS
1179	BANNE	BANNER HEALTH
38	BEECH	BEECH STREET
413	BILLD	BILL DANIELS CENTER
61	CHAMP	CHAMPVA
403	CHARI	CHARITY CARE
64	CHOIC	CHOICE HEALTH
378	CHOIC	CHOICE/DH MEDICAID
71	CHPCA	CHP+ COLORADO ACCESS
126	CHPDH	CHP+ DENVER HEALTH
171	CHPK	CHP+ KAISER
184	CHPRM	CHP+ ROCKY MOUNTAIN

<b>Numeric Code</b>	<b>Alpha Code</b>	<b>Insurance Company</b>
2000	CHPMC	CHP+ STATE MNGD CARE
362	CHSWY	CHS WYOMING
73	CICP	CICP
67	CIGNA	CIGNA
66	CNIC	CNIC
371	COFIN	COFINITY
69	COACC	COLORADO ACCESS
1174	CODOC	COLORADO DEPT OF CORRECTIONS
407	COMPS	COMPSYCH
451	CORE	CORE SOURCE
368	COVER	COVER COLORADO
1178	CUGME	CU GME HEALTH/DENTAL
97	DHM	DENVER HEALTH MEDICAL PLAN, INC.
411	DISAS	DISASTER RELIEF
100	DONOR	DONOR ALLIANCE
107	EMPAS	EMPLOYEE ASSISTANCE
1175	EMPHE	EMPLOYEE HEALTH
1176	FIRCA	FIRST CARE
418	FIRCH	FIRST CHOICE OF THE MIDWEST
119	FIRHE	FIRST HEALTH GROUP
137	GOVER	GOVERNMENT EMPLOYEES
139	GREAT	GREAT-WEST HEALTHCARE
421	HLTEX	HEALTH EXCHANGE
154	HLTMG	HEALTH MANAGEMENT ASSOCIATES
375	HLTNT	HEALTH NET PPO
172	HUMAN	HUMANA/CHOICECARE
176	IHS	INDIAN HEALTH SERVICE
402	INTER	INTERLINK HEALTH SERVICES
187	KP	KAISER PERMANENTE
420	MCDKS	KANSAS MEDICAID
196	LIFET	LIFETRAC
405	MAGEL	MAGELLAN BEHAVIORAL
199	MAILH	MAILHANDLERS BENEFIT
1177	MHN	MANAGED HEALTH NETWORK
364	MDA	MDA GRANT
423	MEDIC	MEDICA
209	MCD	MEDICAID
2014	MCDNE	MEDICAID NEBRASKA
2023	MEDIC	MEDICAID ESRD NEBRASKA
2024	MCEWY	MEDICAID ESRD WYOMING
2013	MCDMO	MEDICAID MONTANA

<b>Numeric Code</b>	<b>Alpha Code</b>	<b>Insurance Company</b>
2012	MCDCA	MEDICAID CALIFORNIA
2015	MCDNM	MEDICAID NEW MEXICO
2016	MCDNC	MEDICAID NORTH CAROLINA
2017	MCDOK	MEDICAID OKLAHOMA
2018	MCDOR	MEDICAID OREGON
2019	MCDOT	MEDICAID OTHER STATE
2020	MCDSD	MEDICAID SOUTH DAKOTA
2021	MCDWA	MEDICAID WASHINGTON
2022	MCDWY	MEDICAID WYOMING
424	MUTOM	MEDICAL MUTUAL OF OMAHA
215	MCARE	MEDICARE
225	MIDLA	MIDLANDS CHOICE
372	MINES	MINES AND ASSOC
416	MOLIN	MOLINA HLTHCR
231	MULTI	MULTIPLAN, INC.
370	NETWO	NETWORK CLAIMS ADMIN
253	NCARE	NORTHCARE
257	OTHCO	OTHER COMMERCIAL
258	OTHCS	OTHER COMMERCIAL SEC
263	PACLF	PACIFIC LIFE & ANNUITY
262	PACCR	PACIFICARE
281	PHCSM	PHCS/MULTICARE
425	PILGR	PILGRIM HEALTHCARE
426	POMCO	POMCO
455	PREFE	PREFERRED BENEFIT AD
415	PREPA	PREPAID PACKAGES
2001	PRESB	PRESBYTERIAN HEALTH
453	PRIVA	PRIVATE HEALTHCARE SYSTEMS
283	PROBE	PRO BEHAVIORAL HEALTH
401	PSYCH	PSYCH COMMERCIAL
288	PUPIL	PUPIL ASSISTANCE FUND
454	RELIA	RELIANCE STANDARD
292	RMH	ROCKY MOUNTAIN HEALTH
369	RMM	ROCKY MOUNTAIN/MEDICAL
295	SANLU	SAN LUIS VALLEY HMO
296	SCOTT	SCOTTISH RITE FOUNDATION
106	SELF	SELF PAY AGREEMENT
450	SFH	SELF-FUNDED HEALTH B
428	SMITH	SMITH ADMINISTRATORS
429	SRCSV	SRC SERVICES INC
306	STFRM	STATE FARM MUTUAL INSURANCE

<b>Numeric Code</b>	<b>Alpha Code</b>	<b>Insurance Company</b>
419	MEGA	THE MEGA LIFE AND HEALTH
328	TRICA	TRICARE
430	TUFTS	TUFTS HEALTH PLAN
431	UMR	UMR
332	UNICA	UNICARE LIFE & HEALTH
374	UNMED	UNITED MEDICAL ALLIANCE
373	UNRES	UNITED RESOURCE NETWORK
410	VALUE	VALUE OPTIONS
412	WINHE	WINHEALTH
357	WORKC	WORKERS COMP

### Vocabulary 22 - Client Status

User-defined Table 0441 – Immunization registry status (Similar to previous NIP-defined NIP006 – Patient registry status) (Use in PD1-16)

<b>Code</b>	<b>Description</b>
A	Active
I	Inactive
L	Inactive - Lost to follow-up (cannot contact)
M	Inactive - Moved or gone elsewhere (MOGE) (transferred)
P	Inactive - Permanently inactive (do not re-activate or add new entries to this record)
O	Other
U	Unknown

### Vocabulary 23 - Language

User-defined Table HL70296 – Language (Use in PID-15)

<b>Code</b>	<b>Description</b>
ASL	American Sign Language
AM	Amharic
AR	Arabic
HY	Armenian

BN	Bengali
BU	Burmese
KM	Cambodian (Kmer)
CA	Cantonese
CJD	Chamorro
CH	Chinese
HR	Croatian
CS	Czech
NI	Dutch
EN	English
FA	Farsi
FR	French
DE	German
EL	Greek
HI	Hindi
HM	Hmong
HU	Hungarian
ILO	Ilocano
ID	Indonesian
IT	Italian
JA	Japanese
KA	Karen
KO	Korean
LA	Laotian
LA	Laotian
MA	Mandarin
NA	Native American
NE	Nepalese
NA	North American Indian
OT	Other
PO	Polish
PG	Portuguese
RO	Romanian
RUM	Rumanian
RU	Russian
SM	Samoan
SR	Serbian
SK	Slovak
SO	Somali
ES	Spanish
SW	Swahili
TL	Tagalog

TH	Thai
TI	Tigrinya
TO	Tongan
UK	Ukrainian
UN	Undetermined
UR	Urdu
VI	Vietnamese
YI	Yiddish

### Vocabulary 24 – Vaccine Funding Source

NIP-defined Table NIP008 – Use in OBX-5 when OBX-3 is valued as 30963-3-Vaccine purchased with

Code	Description
PVF	Private Funds
PBF	Public Funds (e.g., VFC)
MLF	Military Funds
OTH	Other
SPC	Special Projects

### Vocabulary 25 - Observation Identifiers

NIP-defined NIP003 - Observation identifiers (use in OBX-3)

Code	Description	OBX-2 Data Type	OBX-5 notes
<b>Contraindications, Precautions, and Immunities</b>			
30946-8	Vaccination contraindication/precaution effective date	DT	
30944-3	Vaccination temporary contraindication/precaution expiration date	DT	
30945-0	Vaccination contraindication/precaution	CE	Use Vocabulary 15
31044-1	Reaction	CE	Use Vocabulary 18
<b>Vaccine Information Statement (VIS) Dates</b>			
29768-9	Date Vaccine Information Statement Published	TS	199000605
29769-7	Date Vaccine Information Statement Presented	TS	199307311615

### Vocabulary 26 – Completion status

HL7-defined Table 0322 - Completion status (use in RXA-20)

<b>Code</b>	<b>Description</b>
CP	Complete
RE	Refused
NA	Not Administered
PA	Partially Administered (CIIS treats same as NA)