



*STC IWeb Local Implementation Guide for  
HL7 2.5.1 Immunization Messaging*

---

Version 1.8  
*09/10/2012*

---

# VERSION HISTORY

Version #	Implemented By	Revision Date	Reason
0.1	Eric Larson	02/24/2011 – 4/08/2011	Initial creation through peer feedback by IIS and EHR community.
1.0	Eric Larson	04/11/2011	Group consensus to move forward into version 1.0 after review cycles.
1.1b	Caleb Shoemaker	09/21/2011	Initial migration of STC IWeb HL7 Interface Specification into the CDC guide.
1.1	Caleb Shoemaker	09/29/2011	First version of the STC guide.
1.2	Caleb Shoemaker	10/25/2011	Incorporated feedback from AKHD
1.3	June Herion	11/12//2011	Incorporated feedback from AK
1.4	Sherri Bull	12/19/2011	Corrected grammar and spelling errors. Added Route of Administration and Administration Site into Appendix (extracted from CDC HL7 Guide).Accepted changes; added RXR-1 and RXR-2.
1.5	Sherri Bull	12/31/2011	Merged documents and finalized.
1.6	Sherri Bull	1/10/2012	Reviewed changes made by Caleb and June and formatted/finalized documents.
1.7	Sherri Bull	08/07/2012	Inserted “facility” in a sentence for RXA-11. Inserted new field definitions for RXA-6 and RXA-7.
1.8	Sherri Bull	09/21/2012	Added v4.12.7 CRs/Bug Corrections. Edited RXA-5.0, 5.2, 5.5 Vaccine Description has a limit of 60 characters; Added more information for RXA-6 and RXA-7.

# Table of Contents

<b>1.</b>	<b>INTRODUCTION .....</b>	<b>1</b>
	INTENDED AUDIENCE .....	2
	SCOPE .....	2
	ORGANIZATION AND FLOW .....	3
<b>2.</b>	<b>ACTORS, GOALS, AND MESSAGING TRANSACTIONS .....</b>	<b>4</b>
<b>3.</b>	<b>HL7 MESSAGING INFRASTRUCTURE.....</b>	<b>6</b>
<b>4.</b>	<b>HL7 DATA TYPES.....</b>	<b>9</b>
<b>5.</b>	<b>SEGMENTS AND MESSAGE DETAILS.....</b>	<b>10</b>
	BHS—BATCH HEADER SEGMENT (NOT SUPPORTED) .....	15
	BTS—BATCH TRAILER SEGMENT (NOT SUPPORTED).....	15
	ERR—ERROR SEGMENT.....	16
	ERR FIELD DEFINITIONS:.....	18
	ERR-1 Error Location (ELD) 01812.....	18
	ERR-2 Error Location (ERL) 01812.....	19
	ERR-3 HL7 Error Code (CWE) 01813.....	19
	ERR-4 Severity (ID) 01814.....	19
	ERR-5 Application Error Code (CWE) 01815.....	19
	ERR-6 Application Error Parameter (ST) 01816 .....	19
	ERR-8 User Message (TX) 01818 .....	19
	EVN EVENT TYPE SEGMENT .....	20
	EVN FIELD DEFINITIONS .....	20
	EVN-2 Recorded Date/Time (TS) 00100.....	20
	EVN-3 Recorded Date/Time (TS) 00100.....	21
	EVN-4 Recorded Date/Time (TS) 00100.....	21
	EVN-6 Event Occurred (TS) 00100.....	21
	FHS FILE HEADER SEGMENT (NOT SUPPORTED).....	21
	FTS FILE TRAILER SEGMENT (NOT SUPPORTED).....	21
	MSA—MESSAGE ACKNOWLEDGEMENT SEGMENT .....	22
	MSA FIELD DEFINITIONS .....	22
	MSA-1 Acknowledgment Code (ID) 00018.....	22
	MSA-2 Message Control ID (ST) 00010.....	23
	MSA-3 Text Message (ST) .....	23
	MSA-6 Error Condition (CE).....	23
	MSH—MESSAGE HEADER SEGMENT .....	24
	MSH FIELD DEFINITIONS.....	26
	MSH-1 Field Separator (ST) 00001.....	26
	MSH-2 Encoding Characters (ST) 00002 .....	26
	MSH-3 Sending Application (HD) 00003 .....	27
	MSH-4 Sending Facility (HD) 00004 .....	27
	MSH-5 Receiving Application (HD) 00005 .....	27
	MSH-6 Receiving Facility (HD) 00006.....	27
	MSH-7 Date/Time Of Message (TS) 00007 .....	27
	MSH-9 Message Type (MSG) 00009 .....	28
	MSH-10 Message Control ID (ST) 00010 .....	28
	MSH-11 Processing ID (PT) 00011 .....	28

MSH-12 Version ID (VID) 00012 .....	29
MSH-16 Application Acknowledgment Type (ID) 00016 .....	29
NK1—NEXT OF KIN SEGMENT.....	29
NK1 FIELD DEFINITIONS.....	33
NK1-1 Set ID NK1 (SI) 00190 .....	33
NK1-2 Name (XPN) 00191.....	33
NK1-3 Relationship (CE) 00192.....	34
NK1-4 Address (XAD) 00193 .....	34
NK1-5 Phone Number (XTN) 00194 .....	35
NK1-13 Organization Name (XON).....	35
NK1-33 Next of Kin/Associated Party's Identifiers (CX) .....	35
NTE—NOTE SEGMENT .....	36
NTE FIELD DEFINITIONS .....	36
NTE-3 Comment (FT) 00098.....	36
OBX—OBSERVATION RESULT SEGMENT .....	36
OBX FIELD DEFINITIONS.....	40
OBX-1 Set ID OBX (SI) 00569 .....	40
OBX-2 Value Type (ID) 00570 .....	40
OBX-3 Observation Identifier (CE) 00571 .....	40
OBX-5 Observation Value (varies) 00573 .....	42
OBX-6 Units (CE) 00574 .....	43
OBX-7 Reference Range (CE) 00575 .....	43
OBX-8 Abnormal Flags (DT) 00576 .....	43
OBX-11 Observation Result Status (ID) 00579 .....	43
OBX-14 Date/Time of the Observation (TS) 00582.....	43
ORC—ORDER REQUEST SEGMENT.....	43
ORC FIELD DEFINITIONS.....	47
ORC-1 Order Control (ID) 00215 .....	47
ORC-2 Placer Order Number (EI) 00216 .....	48
ORC-3 Filler Order Number (EI) 00217.....	48
ORC-12 Ordering Provider (XCN) 00226.....	48
ORC-21 Ordering Facility Name (XON) 01311.....	48
ORC-22 Ordering Facility Address (XAD) 01312 .....	48
ORC-23 Ordering Facility Phone Number (XTN) 01312 .....	49
PD1—PATIENT DEMOGRAPHIC SEGMENT .....	49
PD1 FIELD DEFINITIONS.....	52
PD1-3 Patient Primary Facility (XON) 00756 .....	52
PD1-4 Patient Primary Care Provider Name & ID No. (XCN) 00757 .....	52
PD1-11 Publicity Code (CE) 00743 .....	52
PD1-12 Protection Indicator (ID) 00744 .....	53
PD1-13 Protection Indicator Effective Date (DT) 01566.....	55
PD1-16 Immunization Registry Status (IS) 01569.....	55
PID—PATIENT IDENTIFIER SEGMENT .....	57
PID FIELD DEFINITIONS.....	62
PID-1 Set ID PID (SI) 00104 .....	62
PID-3 Patient Identifier List (CX) 00106 .....	63
PID-5 Patient Name (XPN) 00108.....	65
PID-6 Mother's Maiden Name (XPN) 00109 .....	65
PID-7 Date/Time of Birth (TS) 00110.....	66
PID-8 Administrative Sex (IS) 00111 .....	66
PID-9 Patient Alias (XPN) 00112.....	66
PID-10 Race (CE) 00113.....	66
PID-11 Patient Address (XAD) 00114.....	67

PID-13 Phone Number - Home (XTN) 00116.....	68
PID-15 Primary Language (CE) 00118.....	70
PID-19 SSN Number - Patient (ST) 00122.....	70
PID-22 Ethnic Group (CE) 00125.....	70
PID-24 Multiple Birth Indicator (ID) 00127.....	71
PID-25 Birth Order (NM) 00128.....	72
PID-29 Patient Death Date and Time (TS) 00740.....	72
PID-30 Patient Death Indicator (ID) 00741.....	73
PID-33 Last Update Date/Time (TS) 01537.....	73
PV1—PATIENT VISIT SEGMENT.....	73
PV1 FIELD DEFINITIONS.....	76
PV1-2 Patient Class (IS) 00132.....	76
PV1-20 Financial Class (FC) 00150.....	76
QAK—QUERY ACKNOWLEDGEMENT SEGMENT.....	78
QAK FIELD DEFINITIONS.....	79
QAK-1 Query Tag (ST) 00696.....	79
QAK-2 Query Response Status (ID) 00708.....	80
QRD: QUERY DEFINITION SEGMENT.....	80
QRD FIELD DEFINITIONS.....	82
QRD-1: Query Date/Time.....	82
QRD-2: Query Format Code.....	82
QRD-3: Query Priority.....	82
QRD-4: Query Id.....	82
QRD-7: Quantity Limited Request.....	82
QRD-8: Who Subject Filter (XCN).....	82
QRD-9: What Subject Filter (CE).....	83
QRD-10: What Department Data Code (CE).....	83
QRF: QUERY FILTER SEGMENT.....	83
QRF FIELD DEFINITIONS.....	85
QRF-1: Where Subject Filter.....	85
QRF-2: When Data Start Date/Time.....	85
QRF-3: When Data End Date/Time.....	85
QRF-5: Other Query Subject Filter.....	85
QPD – QUERY PARAMETER DEFINITION (NOT SUPPORTED).....	86
RCP – RESPONSE CONTROL PARAMETER SEGMENT (NOT SUPPORTED).....	86
RXA – PHARMACY/TREATMENT ADMINISTRATION SEGMENT.....	86
RXA FIELD DEFINITIONS.....	90
RXA-1 Give Sub-ID Counter (NM) 00342.....	90
RXA-2 Administration Sub-ID Counter (NM) 00344.....	90
RXA-3 Date/Time Start of Administration (TS) 00345.....	91
RXA-4 Date/Time End of Administration (If Applies) (TS) 00346.....	91
RXA-5 Administered Code (CE) 00347.....	91
RXA-6 Administered Amount (NM) 00348.....	92
RXA-7 Administered Units (CE) 00349.....	93
RXA-9 Administration Notes (CE) 00351.....	93
RXA-10 Administering Provider (XCN) 00352.....	94
RXA-11 Administered-at Location (LA2) 00353.....	95
RXA-15 Substance Lot Number (ST) 01129.....	96
RXA-16 Substance Expiration Date (TS) 01130.....	96
RXA-17 Substance Manufacturer Name (CE) 01131.....	96
RXA-18 Substance/Treatment Refusal Reason (CE) 01136.....	96
RXA-19 Indication (ID) (CE) 01123.....	96
RXA-20 Completion Status (ID) 01223.....	97

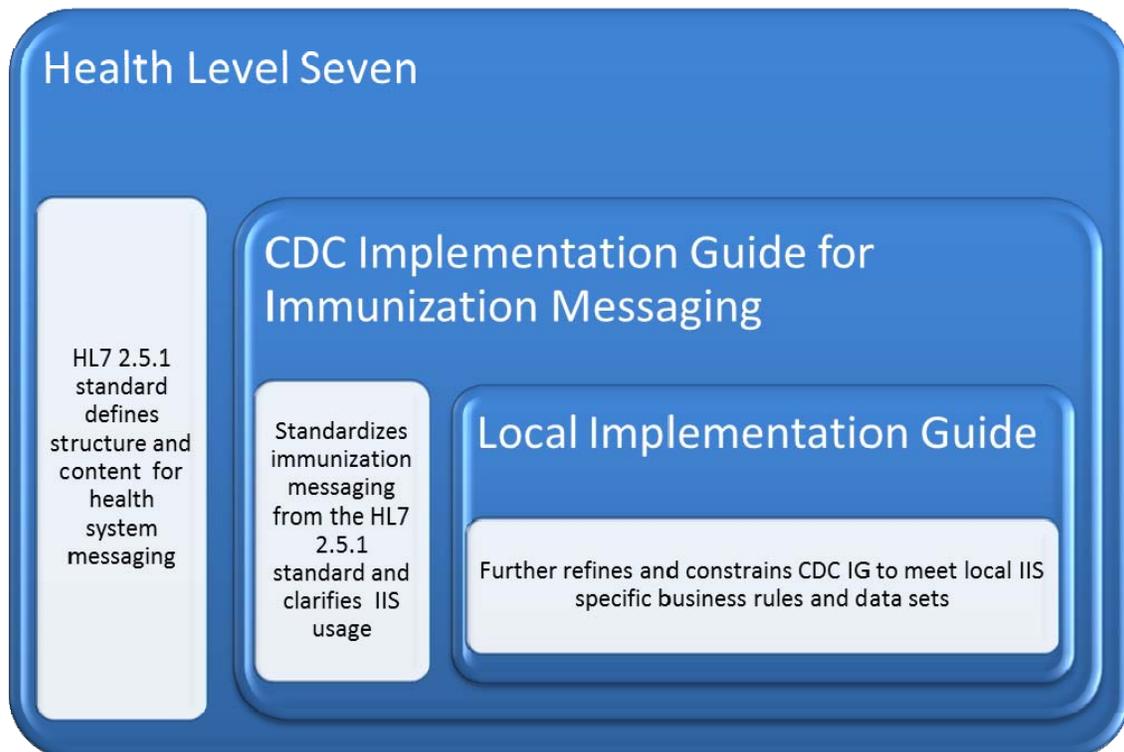
	RXA-21 Action Code – RXA (ID) 01224 .....	97
	RXA-22 System Entry Date/Time (TS) 01225 .....	97
	RXR – PHARMACY/TREATMENT ROUTE SEGMENT .....	97
	RXR FIELD DEFINITIONS .....	98
	RXR-1 Route (CE) 00309 .....	98
	RXR-2 Administration Site (CWE) 00310 .....	99
<b>6.</b>	<b>MESSAGES FOR TRANSMITTING IMMUNIZATION INFORMATION.....</b>	<b>100</b>
	SEND IMMUNIZATION HISTORY--VXU .....	101
	ACKNOWLEDGING A MESSAGE--ACK .....	104
<b>7.</b>	<b>QUERY AND RESPONSE PROFILE (QBP/RSP) (NOT YET IMPLEMENTED).....</b>	<b>105</b>
<b>8.</b>	<b>CHANGE HISTORY .....</b>	<b>106</b>
<b>9.</b>	<b>APPENDIX A: CODE TABLES .....</b>	<b>107</b>
	ADVERSE REACTION .....	107
	ANATOMICAL ROUTE .....	108
	ANATOMICAL SITE .....	109
	CONTRAINDICATION .....	109
	ETHNICITY CODES .....	112
	INACTIVE CODE .....	112
	INSERT ERROR .....	112
	LANGUAGE .....	114
	RACE CODES .....	114
	ADMINISTRATIVE SEX CODES .....	114
	VACCINATION SIIS CODES .....	115
	VFC CODES .....	123
<b>10.</b>	<b>APPENDIX B: VFC AND LOT TRACKING .....</b>	<b>125</b>
<b>11.</b>	<b>APPENDIX C: ADDITIONAL FIELDS SUPPORTED FOR BACKWARDS COMPATIBILITY .....</b>	<b>126</b>
	FT1—FINANCIAL TRANSACTION .....	126
	FT1 FIELD DEFINITIONS .....	128
	FT1-4 Transaction Date (TS) .....	128
	FT1-6 Transaction Code (IS) .....	128
	FT1-7 Transaction Code (CE) .....	128
	FT1-20 Performed By (XCN) .....	128
	FT1-25 Procedure Code (CE) .....	128
	GT1: GUARANTOR .....	129
	GT1 FIELD DEFINITIONS .....	129
	GT1-3 Guarantor Name .....	129
	GT1-6 Guarantor Phone Number .....	129
	OBR-15: SPECIMEN SOURCE .....	129
	RXR-1: ROUTE OF ADMINISTRATION .....	129
	RXR-2: ADMINISTRATION SITE .....	130
	STF: STAFF IDENTIFICATION SEGMENT .....	130
	STF FIELD DEFINITIONS .....	130
	STF-1: Encrypted User Id .....	130
	STF-2: Encrypted Password .....	131
	ZSP: STC PATIENT SEGMENT .....	131
	ZSP FIELD DEFINITIONS .....	131
	ZSP-1: Facility Name .....	131
	ZSP-2: Facility Phone .....	132

ZSP-4: COMMENT .....	133
ZSP-5: Health District .....	133
ZSV: STC VACCINATION SEGMENT .....	133
ZSV FIELD DEFINITIONS .....	133
ZSV-1: Facility Name .....	133
ZSV-2: Facility Phone .....	133
ZSV-3: Comment .....	133
ZSV-4: Health District .....	133
ZSV-5: Vis Given Date .....	133
ZSV-6: Tb Induration Result .....	134
ZSV-7: VFC Eligibility .....	134
ZSV-8: TB Induration .....	134
ZSV-9: VIS Date .....	134

[This page intentionally left blank.]

## 1. Introduction

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



### *HL7 Controlling Document Hierarchy*

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

The second document is the CDC's **HL7 2.5.1 Implementation Guide for Immunization Messaging, Release 1.2** (CDC IG). This guide gives specific instructions regarding how to report to immunization information systems, but still

leaves some implementation decisions to each state IIS. This guide and other technical information can be obtained from the CDC website at <http://www.cdc.gov/vaccines/programs/iis/stds/standards.htm>.

The third document is this document. It finalizes all implementation decisions and defines exactly what **<System Name Here>** will and will not accept. It is written in accordance with the standards set in the first two documents. This local implementation guide has taken great care to point out differences from the CDC IG by adding additional columns to the tables. In cases where this guide differs from the CDC IG, this guide will provide both the CDC IG column followed the local usage specification. This effort will prove highly useful in the larger interoperability effort for Electronic Health Record Systems, Indian Health Services, and any other electronic exchange that may span multiple IIS. Providing this information will allow the implementers of external systems to accurately compare the CDC IG with a local implementation guide, and compare differences between two different local implementation guides much easier than in the past.

### Intended Audience

This Local IG is intended for technical groups from IIS and EHR-S that must implement these guidelines. The reader of this Local IG should have a solid HL7 foundation and be very familiar with the contents of the CDC IG (<http://www.cdc.gov/vaccines/programs/iis/stds/standards.htm>). Chapters 2 and 3 of the CDC IG provide HL7 foundational concepts and set the stage for this Local IG. The goal of this Local IG is to provide an unambiguous specification for creating and interpreting messages.

### Scope

This Local IG is intended to facilitate the exchange of immunization records between external Health Systems and **<System Name Here>**. This includes:

- sending and receiving immunization histories for individuals
- sending and receiving demographic information about the individuals
- requesting immunization histories for individuals
- responding to requests for immunization histories by returning immunization histories
- acknowledging receipt of immunization histories and requests for immunization histories
- reporting errors in the messaging process
- Sending observations about an immunization event (this may include funding, reactions, forecasts and evaluations).

## Organization and Flow

This Local IG is designed to mirror the organization and flow of the CDC IG. This chapter of this guide defines the high-level use cases supported by **<System Name Here>**. The subsequent chapters define how **<System Name Here>** implements those use cases. Finally, this guide has appendices for the code tables and example messages.

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

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

In cases where differences exist between this guide and the CDC IG the differences will be clearly defined in the appropriate sections of this guide.

## **2. Actors, Goals, and Messaging Transactions**

Chapter 2 of the CDC IG defines actors (entities) that may be involved in sending or receiving immunization-related messages. It describes what actors are and how use cases (goals) can be associated to those actors. Finally, it associates specific HL7 messages with these use cases.

There are nine use cases defined in Chapter 2 of the CDC IG. The use cases listed in the CDC IG and supported by **<System Name Here>** are:

Use Case	Goal	Supported by <b>&lt;System Name Here&gt;</b>
Send Immunization History	To send an immunization history for an individual client from one system to another. In addition to EHR-S and IIS, other systems such as vital records systems or billing systems could use this message to send immunization histories.	No
Receive Immunization History	To receive an unsolicited immunization history. It may be an update or a new record.	Yes
Request Immunization History	To request an immunization history from another system.	Yes
Return Immunization History	To return an immunization history to another system.	Yes
Accept Requested History	To accept an immunization history in response to a query for an immunization history from another system.	Yes
Send Demographic Data	To send demographic data about a person. It may be an update or a new record.	No
Accept Demographic Data	To accept demographic data about a person. It may be an update or a new record.	Yes
Acknowledge Receipt	To acknowledge receipt of a message. This can be an immunization history, request for immunization history, demographic update, observation report or request for personal id. It may indicate success or failure. It may include error messages.	Yes
Report Error	To send error messages related to messages.	Yes

For detailed specifics about each use case, please refer to Chapter 2 of the CDC IG.

### 3. HL7 Messaging Infrastructure

The CDC IG contains basic descriptions of terms and definitions that are used in both the CDC IG and this guide. To avoid potentially ambiguous situations, the majority of the terms and definitions will not be redefined in this guide.

A key attribute to HL7 fields, components, and sub-components is the Usage Code. In the table below are the acceptable Usage Codes used in this implementation guide.

*In cases where the CDC guide requires an element but <System Name> ignores it, the system usage will indicate 'R' or 'RE' based on what the CDC IG expresses in order to encourage compliance. If the CDC IG considers an element optional but <System Name> ignores it, the system usage will indicate 'O' and there will be no field definition present.*

Usage Code	Interpretation	Comment
R	Required	<p>A conforming sending application shall populate all "R" elements with a non-empty value.</p> <p>Conforming receiving application shall process or ignore the information conveyed by required elements.</p> <p>A conforming receiving application must not raise an error due to the presence of a required element, but may raise an error due to the absence of a required element.</p>
RE	Required but may be empty	<p>The element may be missing from the message, but it must be sent by the sending application if there is relevant data.</p> <p>A conforming sending application must be capable of providing all "RE" elements. If the conforming sending application knows the required values for the element, then it must send that element. If the conforming sending application does not know the required values, then that element will be omitted.</p> <p>Receiving applications will be expected to process or ignore data contained in the element, but must be able</p>

Usage Code	Interpretation	Comment
		to successfully process the message if the element is omitted (no error message should be generated because the element is missing).
C	Conditional	<p>This usage has an associated condition predicate. This predicate is an attribute within the message. <b>If the predicate is satisfied:</b></p> <p>A conformant sending application must always send the element.</p> <p>A conformant receiving application must process or ignore data in the element. It may raise an error if the element is not present.</p> <p><b>If the predicate is NOT satisfied:</b></p> <p>A conformant sending application must NOT send the element.</p> <p>A conformant receiving application must NOT raise an error if the condition predicate is false and the element is not present, though it may raise an error if the element IS present.</p>
CE	Conditional but may be empty	<p>This usage has an associated condition predicate. This predicate is an attribute within the message. <b>If the predicate is satisfied:</b></p> <p>If the conforming sending application knows the required values for the element, then the application must send the element.</p> <p>If the conforming sending application does not know the values required for this element, then the element shall be omitted. The conforming sending application must be capable of knowing the element (when the predicate is true) for all 'CE' elements.</p> <p>If the element is present, the conformant receiving application shall process or ignore the values of that element. If the element is not present.</p> <p>The conformant receiving application shall not raise an error due to the presence or absence of the element.</p>

Usage Code	Interpretation	Comment
		<p><b>If the predicate is not satisfied:</b> The conformant sending application shall not populate the element.</p> <p>The conformant receiving application may raise an application error if the element is present.</p>
O	Optional	<p>This element may be present if specified in local profile. Local partners may develop profiles that support use of this element. In the absence of a profile, conformant sending applications will not send the element.</p> <p>Conformant receiving applications will ignore the element if it is sent, unless local profile specifies otherwise. Conformant receiving applications may not raise an error if it receives an unexpected optional element.</p>
B	Backwards compatibility	<p>While not supported by the CDC 2.5.1 IG, the element is supported in &lt;System Name&gt; for backwards compatibility with HL7 version 2.3.1.</p> <p><b>Note that this is not a code that the CDC uses, but has been introduced by STC to reflect the support of multiple versions of HL7.</b></p>
X	Not Supported	<p>The element is not supported. Sending applications should not send this element. Receiving applications should ignore this element if present. A receiving application may raise an error if it receives an unsupported element. Any profile based on this Guide should not specify use of an element that is not supported in this Guide.</p>

## 4. HL7 Data Types

The CDC IG contains clearly defined HL7 data types that are the building blocks of an HL7 message. Similar to the terms and definitions found in the HL7 Messaging Infrastructure section above, this guide will avoid potentially ambiguous situations and not attempt to redefine an already clearly defined section. This guide will adhere to Chapter 4 of the CDC IG.

In addition, the CDC 2.3.1 IG contains definitions of relevant HL7 data types supported in messages of the same version for backward compatibility. Where there are irreconcilable differences, a configuration option in the HL7 Upload Settings page for an incoming account is commonly supplied.

## 5. Segments and Message Details

This chapter will contain specifications for each segment used. It will indicate which fields are supported or required and describe any constraints on these fields. Chapter 6 will address how these building blocks are assembled into specific messages that meet the use cases listed in Chapter 2.

### *Message Segments*

<b>Segment (Name/Role)</b>	<b>Definition</b>	<b>Message Usage</b>	<b>CDC IG Usage</b>	<b>&lt;SYSTEM NAME&gt; Usage</b>	<b>Note</b>
BHS (Batch Header Segment)	The Batch Header Segment wraps a group of one or more messages. These may be a mixture of acceptable message types. This segment is not required for real-time messaging. That is, a stream of messages may be sent without a BHS. A system may choose to require BHS for all groups of messages, but should specify this requirement in a local implementation Guide.	Any	Optional	Not Supported	Used at the beginning of any batch of messages.
BTS (Batch Trailer Segment)	The BTS segment defines the end of a batch. It is required if the message has a matching BHS.	Any	Required if message starts with BHS.	Not Supported	Used to mark the end of any batch of messages. If the batch of messages starts with a BHS, then this segment is required.

Segment (Name/Role)	Definition	Message Usage	CDC IG Usage	<SYSTEM NAME> Usage	Note
ERR (Error Segment)	The error segment reports information about errors in processing the message. The segment may repeat. Each error will have its' own ERR segment.	ACK, RSP	Ability to create and process is required for conformant systems.	ACK	Used to return information about errors.
EVN (Event Segment)	The EVN segment is used to communicate necessary trigger event information to receiving applications. Valid event types for all chapters are contained in HL7 Table 0003 - Event Type	ADT	Required for ADT message.	ADT	Used to convey event trigger information.
FHS (File Header Segment)	The file header segment may be used to group one or more batches of messages. This is purely an optional segment, even if batches are sent. Its use is not anticipated for use in real-time transactions. Any system that anticipates its use should specify this in a local implementation guide.	Any	Optional	Not Supported	Used to mark the beginning of a file of batches.
FTS (File Trailer Segment)	The FTS segment defines the end of a file of batches. It is only used when the FHS segment is used.	Any	Required to terminate a file of batches. (Matches FHS)	Not Supported	Used to mark the end of a file of batches. If a file of batches has an FHS at the beginning, then this segment is required.

Segment (Name/Role)	Definition	Message Usage	CDC IG Usage	<SYSTEM NAME> Usage	Note
IN1-3 (Insurance Segment)	The IN1-IN3 segments contain insurance policy coverage information necessary to produce properly prorated and patient and insurance bills.	VXU	Optional	VXU	This segment is not anticipated for use in immunization messages, but may be specified for local use.
MSA (Message Acknowledgement Segment)	This segment is included in the query response (RSP) and acknowledgment (ACK) messages. It contains information used to identify the receiver's acknowledgement response to an identified prior message.	RSP, ACK	Ability to create and process is required for conformant systems.	ACK, QAK	
MSH (Message Segment Header)	The MSH segment defines the intent, source, destination, and some specifics of the syntax of a message.	All	Ability to create and process is required for conformant systems.	All	This begins every message and includes information about the type of message, how to process it, and by whom it was created.
NK1 (Next of Kin Segment)	The NK1 segment contains information about the patient's next of kin or other related parties. Any associated parties may be identified.	VXU, ADT, RSP	Ability to create and process is required for conformant systems.	VXU, ADT, VXR	Used to carry information about the next of kin for a client.

Segment (Name/Role)	Definition	Message Usage	CDC IG Usage	<SYSTEM NAME> Usage	Note
NTE (Note Segment)	The NTE segment is used for sending notes and comments. It is used in relation to OBX in the VXU and RSP.	VXU, ADT, RSP	Ability to create and process is required for conformant systems.	VXQ, VXR, ADT	Used to carry a note related to the parent segment.
OBX (Observation Result Segment)	The observation result segment has many uses. It carries observations about the object of its parent segment. In the VXU/RSP it is associated with the RXA or immunization record. The basic format is a question and an answer.	ADT, VXU, RSP	Ability to create and process is required for conformant systems.	VXU, ORU, VXR	Used to report one atomic part of an observation.
ORC (Order Request Segment)	The Common Order segment (ORC) is used to transmit fields that are common to all orders (all types of services that are requested). While not all immunizations recorded in an immunization message are able to be associated with an order, each RXA must be associated with one ORC, based on HL7 2.5.1 standard.	VXU, RSP	Ability to create and process is required for conformant systems.	VXU, VXR	Used to give information about a group of one or more orders (typically RXA).

Segment (Name/Role)	Definition	Message Usage	CDC IG Usage	<SYSTEM NAME> Usage	Note
PD1 (Patient Demographic Segment)	The patient additional demographic segment contains demographic information that is likely to change about the patient. In immunization messages, this is information about the need to protect the client's information, how they should be part of reminder efforts and their current status in the IIS.	VXU, RSP, ADT	Ability to create and process is required for conformant systems.	VXU, ADT, VXR	Used to give information about a patient. A primary use in immunization messages is to give information about privacy and whether contact is allowed.
PID (Patient Identifier Segment)	This segment contains permanent patient identifying and demographic information that, for the most part, is not likely to change. Used by all applications as the primary means of communicating patient identification information frequently.	VXU, ADT, RSP	Ability to create and process is required for conformant systems.	VXU, ADT, VXR	Used to carry information about the patient/client.
PV1 (Patient Visit Segment)	This segment contains information related to a specific visit.	VXU, ADT, RSP	Ability to create and process is required for conformant systems.	VXU, ADT, VXR	Used to carry information about a given visit. Used in immunization messages to carry information about client eligibility for various funding sources.

Segment (Name/Role)	Definition	Message Usage	CDC IG Usage	<SYSTEM NAME> Usage	Note
QAK (Query acknowledgeme nt segment)	The QAK segment contains information sent with responses to a query.	RSP	Ability to create and process is required for conformant systems.	QCK	
RCP	Response control parameter segment	QBP	Ability to create and process is required for conformant systems.	Not Supported	
RXA	Pharmacy/Treatment Administration Segment	VXU, RSP	Ability to create and process is required for conformant systems.	VXU, VXR	
RXR	Pharmacy/Treatment Route Segment	VXU, RSP	Ability to create and process is required for conformant systems.	VXU, VXR	

### **BHS—Batch Header Segment (Not Supported)**

This segment is not currently supported by <System Name>.

### **BTS—Batch Trailer Segment (Not Supported)**

This segment is not currently supported by <System Name>.

## ERR—Error Segment

Note that the ERR-1 field is not supported in Version 2.5.1.

It may continue to be used for versions 2.4 and earlier as specified in the earlier Implementation Guide. It is the ONLY field that will be included in an ERR segment if the MSH indicates that the message with the error was a version prior to 2.5.

**Error Segment (ERR)**

SEQ	LEN	Data Type	CDC IG Cardinality	<System Name> Cardinality	Value Set	ELEMENT NAME	CDC IG Usage	<System Name> Usage	Comment
1		ELD	[0..0]	[0..*]		Error Code and Location	X	B	Not supported for Version 2.5 and above. Backwards compatible 2.3.1
2	18	ERL	[0..1]	[0..1]		Error Location	RE	RE	If an error involves the entire message (e.g., the message is not parse-able.) then location has no meaning. In this case, the field is left empty.
3		CWE	[1..1]	[0..1]	0357	HL7 Error Code	R	R	This field is required for 2.5.1 messages and optional (ignored) for 2.3.1 messages
4	2	ID	[1..1]	[0..1]	0516	Severity	R	R	This field is required for 2.5.1 messages and optional (ignored) for 2.3.1 messages
5		CWE	[0..1]	[0..1]	0533	Application Error Code	O	O	
6	80	ST	[0..1]	[0..1]		Application Error Parameter	O	O	
7	2048	TX	[0..1]	[0..1]		Diagnostic Information	O	O	Ignored

SEQ	LEN	Data Type	CDC IG Cardinality	<System Name> Cardinality	Value Set	ELEMENT NAME	CDC IG Usage	<System Name> Usage	Comment
8	250	TX	[0..1]	[0..1]		User Message	O	O	This field may contain free text that may be displayed to a user. It is not intended for any further processing.
9	20	IS	[0..1]	[0..1]	0517	Inform Person Indicator	O	O	Ignored
10		CWE	[0..1]	[0..1]	0518	Override Type	O	O	Ignored
11		CWE	[0..1]	[0..1]	0519	Override Reason Code	O	O	Ignored
12		XTN	[0..1]	[0..1]		Help Desk Contact Point	O	O	Ignored

### ERR Field Definitions:

Note: ERR-1 is not supported for use in messages starting with version 2.5, but is supported for backwards compatibility with 2.3.1 messages.

### ERR-1 Error Location (ELD) 01812

**Definition:** The first component is the segment id of the segment that was a problem to the receiving system. The second component is the sequence number that was set for that particular segment. The third component is the field position. The fourth component is the error code. The fifth component contains any text describing the error which occurred.

### ***ERR-2 Error Location (ERL) 01812***

**Definition:** Identifies the location in a message related to the identified error, warning or message. Each error will have an ERR, so no repeats are allowed on this field. This field may be left empty if location is not meaningful. For example, if is unidentifiable, an ERR to that effect may be returned.

### ***ERR-3 HL7 Error Code (CWE) 01813***

**Definition:** Identifies the HL7 (communications) error code. Refer to [HL7 Table 0357 – Message Error Condition Codes](#) for valid values.

### ***ERR-4 Severity (ID) 01814***

**Definition:** Identifies the severity of an application error. Knowing if something is Error, Warning or Information is intrinsic to how an application handles the content. Refer to [HL7 Table 0516 - Error severity](#) for valid values. If ERR-3 has a value of "0", ERR-4 will have a value of "I".

### ***ERR-5 Application Error Code (CWE) 01815***

**Definition:** Application specific code identifying the specific error that occurred. Refer to [User-Defined Table 0533 – Application Error Code](#) for suggested values.

If the message associated with the code has parameters, it is recommended that the message be indicated in the format of the java .text.MessageFormat approach<sup>1</sup>. This style provides information on the parameter type to allow numbers, dates and times to be formatted appropriately for the language.

### ***ERR-6 Application Error Parameter (ST) 01816***

**Definition:** Additional information to be used, together with the Application Error Code, to understand a particular error condition/warning/etc. This field can repeat to allow for up to 10 parameters.

### ***ERR-8 User Message (TX) 01818***

**Definition:** The text message to be displayed to the application user. It is not intended to be processed further by the receiving system.

Example with error in PID:

---

<sup>1</sup> Details on MessageFormat can be found at <sup>1</sup> Details on MessageFormat can be found at <http://java.sun.com/products/jdk/1.2/docs/api/java/text/MessageFormat.html>.

ERR||PID^1^5|101^Required field missing^HL70357^^|E|

## EVN Event Type Segment

### Event Segment (EVN)

SEQ	LEN	Data Type	CDC IG Cardinality	<System Name> Cardinality	Value set	ELEMENT NAME	CDC IG Usage	<System Name> Usage	Comment
1	3	ID	[0.. 1]	[0.. 1]	0003	Event Type Code	O	O	Ignored
2		TS	[1..1]	[1..1]		Recorded Date/Time	R	R	
3		TS	[0..1]	[0..1]		Date/Time Planned Event	O	O	
4	3	IS	[0..1]	[0..1]	0062	Event Reason Code	O	O	
5		XCN	[0..*]	[0..*]	0188	Operator ID	O	O	Ignored
6		TS	[0..1]	[0..1]		Event Occurred	O	O	
7		HD	[0..1]	[0..1]		Event Facility	O	O	Ignored

## EVN Field Definitions

### EVN-2 Recorded Date/Time (TS) 00100

**Definition:** Most systems will default to the system date/time when the transaction was entered, but they should also permit an override.

### ***EVN-3 Recorded Date/Time (TS) 00100***

**Definition:** Most systems will default to the system date/time when the transaction was entered, but they should also permit an override.

### ***EVN-4 Recorded Date/Time (TS) 00100***

**Definition:** Most systems will default to the system date/time when the transaction was entered, but they should also permit an override.

### ***EVN-6 Event Occurred (TS) 00100***

**Definition:** This field contains the date/time that the event actually occurred.

### **FHS File Header Segment (Not Supported)**

This segment is not currently supported by <System Name>.

### **FTS File Trailer Segment (Not Supported)**

This segment is not currently supported by <System Name>.

IN1 Insurance Segment (IN2, IN3) (Not Supported). This segment is not currently supported by <System Name>.

## MSA—Message Acknowledgement Segment

### Message Acknowledgement Segment (MSA)

SEQ	LEN	Data Type	CDC IG Cardinality	<System Name> Cardinality	Value Set	ELEMENT NAME	CDC IG Usage	<System Name> Usage	Comment
1	2	ID	[1..1]	[1..1]	0008	Acknowledgment Code	R	R	
2	20	ST	[1..1]	[1..1]		Message Control ID	R	R	
3	80	ST	[0..1]	[0..1]		Text Message	O	O	
4	15	NM	[0..1]	[0..1]		Expected Sequence Number	O	O	Ignored
5	1	ID	[0..1]	[0..1]		Delayed Acknowledgment Type	O	O	Ignored
6	100	CE	[0..0]	[0..1]	0357	Error Condition	X	B	

## MSA Field Definitions

### MSA-1 Acknowledgment Code (ID) 00018

**Definition:** This field contains an acknowledgment code. See message processing rules. Refer to HL7 Table 0008 - Acknowledgment code for valid values.

### ***MSA-2 Message Control ID (ST) 00010***

**Definition:** This field contains the message control ID of the message sent by the sending system. It allows the sending system to associate this response with the message for which it is intended. This field echoes the message control id sent in MSH-10 by the initiating system.

### ***MSA-3 Text Message (ST)***

**Definition:** Text field that describes an error condition. This text is intended to be included in error logs or shown to the end user.

### ***MSA-6 Error Condition (CE)***

**Definition:** Code to represent various types of errors from message submissions.

## MSH—Message Header Segment

### HL7 ATTRIBUTE TABLE - MSH - MESSAGE HEADER

#### Message Header Segment (MSH)

SEQ	LEN	Data Type	CDC IG Cardinality	<System Name> Cardinality	Value set	ELEMENT NAME	CDC IG Usage	<System Name> Usage	Comment
1	1	ST	[1..1]	[1..1]		Field Separator	R	R	The MSH.1 field shall be
2	4	ST	[1..1]	[1..1]		Encoding Characters	R	R	The MSH.2 field shall be ^~\&
3		HD	[0..1]	[0..1]	0361	Sending Application	RE	RE	
4		HD	[0..1]	[0..1]	0362	Sending Facility	RE	RE	
5		HD	[0..1]	[0..1]	0361	Receiving Application	RE	RE	
6		HD	[0..1]	[0..1]	0362	Receiving Facility	RE	RE	
7		TS	[1..1]	[1..1]		Date/Time Of Message	R	R	The degree of precision must be at least to the minute, and the time zone must be included (format YYYYMMDDHHMM[S S].[S[S[S[S]]]])+/-ZZZZ).

SEQ	LEN	Data Type	CDC IG Cardinality	<System Name> Cardinality	Value set	ELEMENT NAME	CDC IG Usage	<System Name> Usage	Comment
8	40	ST	[0..1]	[0..0]		Security	O	O	Undefined
9	15	MSG	[1..1]	[1..1]		Message Type	R	R	
10	20	ST	[1..1]	[1..1]		Message Control ID	R	R	
11	3	PT	[1..1]	[1..1]		Processing ID	R	R	Strongly recommended to be 'P'
12		VID	[1..1]	[1..1]		Version ID	R	R	2.1, 2.2, 2.3, 2.3.1, 2.4, 2.5.1
13	15	NM	[0..1]	[0..1]		Sequence Number	O	O	Ignored
14	180	ST	[0..1]	[0..1]		Continuation Pointer	O	O	Ignored
15	2	ID	[0..1]	[0..1]	0155	Accept Acknowledgement Type	RE	RE	Ignored
16	2	ID	[0..1]	[0..1]	0155	Application Acknowledgment Type	RE	RE	AL-Always, NE-Never, ER-Error/Reject Only
17	3	ID	[0..1]	[0..0]	0399	Country Code	O	O	Ignored

SEQ	LEN	Data Type	CDC IG Cardinality	<System Name> Cardinality	Value set	ELEMENT NAME	CDC IG Usage	<System Name> Usage	Comment
18	16	ID	[0..1]	[0..0]	0211	Character Set	O	O	Ignored
19		CE	[0..1]	[0..0]		Principal Language Of Message	O	O	Ignored
20	20	ID	[0..1]	[0..0]	0356	Alternate Character Set Handling Scheme	O	O	Ignored
21		EI	[0..*]	[0..0]		Message Profile Identifier	O	O	Ignored

## MSH Field Definitions

### MSH-1 Field Separator (ST) 00001

**Definition:** This field contains the separator between the segment ID and the first real field, MSH-2-encoding characters. As such it serves as the separator and defines the character to be used as a separator for the rest of the message.

The Field Separator is strongly recommended to be the vertical bar “|” (ASCII 124), but may be sent as any value legal in HL7 for backwards compatibility. The rest of the message will be parsed based on this field.

Example:

MSH|

### MSH-2 Encoding Characters (ST) 00002

**Definition:** This field contains the four characters in the following order: the component separator, repetition separator, escape character, and subcomponent separator. Strongly recommended values are ^~\& (ASCII 94, 126, 92, and 38, respectively). These values allow for easier reading of the HL7 message when reviewed by HL7 administrator users. The rest of the message will be parsed based on this field.

### **MSH-3 Sending Application (HD) 00003**

**Definition:** This field uniquely identifies the sending application. The Sending Application is expected in the MSH-3.2 but if blank will be read from MSH-3.1.

Note: For IWeb applications the Sending Application is usually 'IWeb'.

### **MSH-4 Sending Facility (HD) 00004**

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

**Receiving Notes:** The Sending Facility is expected in MSH-4.2 but if empty will be read from MSH-4.1.

Note: For IWeb applications the Sending Facility is the name of the registry (e.g., CHRIP).

Note: The Sending Facility is logged in as the “user” in the HL7 import logs.

### **MSH-5 Receiving Application (HD) 00005**

**Definition:** This field uniquely identifies the receiving application.

**Receiving Notes:** The Sending Application is expected in the MSH-5.2 but if blank will be read from MSH-5.1.

Note: It is assumed that this is a value determined by the application vender and is similar across the same application.

Note: This field is important when routing messages but <System Name> does not route messages. <System Name> is a final destination for messages so will accept any message without regard to receiving application indicated on the message.

### **MSH-6 Receiving Facility (HD) 00006**

**Definition:** This field identifies the organization responsible for the operations of the receiving application.

Note: This field is important when routing messages but <System Name> does not route messages. <System Name> is a final destination for messages so will accept any message without regard to receiving application indicated on the message.

### **MSH-7 Date/Time Of Message (TS) 00007**

**Definition:** This field contains the date/time that the sending system created the message. The degree of precision must be at least to the minute. The time zone must be specified and will be used throughout the message as the default time zone.

Note: This field was made required in version 2.4. Messages with versions prior to 2.4 are not required to value this field. This usage supports backward compatibility.

### MSH-9 Message Type (MSG) 00009

**Definition:** This field contains the message type, trigger event, and the message structure ID for the message. Refer to HL7 Table 0076 - Message type for valid values for the message type code. This table contains values such as ACK, ADT, VXU, ORU etc. The following table lists those anticipated to be used by IIS.

**Message Types**

Transaction	Message type
Unsolicited update of immunization record	VXU
Unsolicited update of demographic data	ADT
Query to another system	VXQ
Response to query	VXX, VXR, QCK, ACK

Refer to HL7 Table 0003 - Event type for valid values for the trigger event. This table contains values like A01, O01, and R01 etc. Message structure component is required.

### MSH-10 Message Control ID (ST) 00010

**Definition:** This field contains the identifier assigned by the sending application (MSH.3) that uniquely identifies a message instance. This identifier is unique within the scope of the sending facility (MSH.4), sending application (MSH.3), and the YYYYMMDD portion of message date (MSH.7). The receiving system echoes this ID back to the sending system in the Message acknowledgment segment (MSA). The content and format of the data sent in this field is the responsibility of the sender. The receiver returns exactly what was sent in response messages.

**Note:** <System Name>'s interface is synchronous so senders can safely assume that if 10 request messages were sent and 10 responses were received back that the 10 responses are in the same order and correspond directly to the 10 requests. See MSH-16 below for options to control whether acknowledgements are returned.

### MSH-11 Processing ID (PT) 00011

**Definition:** This field is used to decide whether to process the message as defined in HL7 Application (level 7) Processing rules. Reference Table HL7 0103 in Appendix A. The choices are Production, Debugging and Training. In most cases, P or Production should be used.

It is important to always send HL7 messages to <System Name> as “P” for production. The other methods behave differently.

### MSH-12 Version ID (VID) 00012

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

Messages conforming to the specifications in this Guide should indicate the version of the CDC guide they conform to. <System Name> will process the message according to the data provided and the configuration options set in the HL7 Uploads Settings or Import Profile.

### MSH-16 Application Acknowledgment Type (ID) 00016

**Definition:** This field contains the conditions under which application acknowledgments are required to be returned in response to this message. This field is required for enhanced acknowledgment mode.

**Receiving Notes:** This behavior can be overridden in the HL7 Upload Settings or Import Profile configuration. The possible values are:

Type	Description
AL	Always return acknowledgement
NE	Never return acknowledgment
ER	Only return acknowledgment when an error occurs

<System Name> extends this option to indicate whether any message is returned, not just acknowledgments. This is if a query message is sent with NE specified, the query will be performed, but no response will be returned.

**Note:** If MSH-15-accept acknowledgment type and MSH-16-application acknowledgment type are omitted (or are both empty), the original acknowledgment mode rules are used. This means that, unless otherwise specified, the receiving application will send acknowledgment when it has processed the message.

### NK1—Next of Kin Segment

The NK1 segment contains information about the patient’s other related parties. Any associated parties may be identified. Utilizing NK1-1 - set ID, multiple NK1 segments can be sent to patient accounts. That is, each subsequent NK1 increments the previous set ID by 1. Therefore, if 3 NK1 were sent in one message, the first would have a set id of 1, the second would have 2 and the third would have 3.

**Next of Kin Segment (NK1)**

SEQ	LEN	Data Type	CDC IG Cardinality	<System Name> Cardinality	Value set	ELEMENT NAME	CDC IG Usage	<System Name> Usage	Comment
1	4	SI	[1..1]	[1..1]		Set ID - NK1	R	R	
2		XPN	[1..*]	[1..2]		Name	R	R	The first instance is the legal name and is required.
3		CE	[1..1]	[1..1]	0063	Relationship	R	R	GRD, MTH, FTH
4		XAD	[0..*]	[0..1]		Address	RE	RE	The first instance shall be the primary address.
5		XTN	[0..*]	[0..1]		Phone Number	RE	RE	The first instance shall be the primary phone number.
6		XTN	[0..*]	[0..0]		Business Phone Number	O	O	Ignored
7		CE	[0..1]	[0..0]	0131	Contact Role	O	O	Ignored
8	8	DT	[0..1]	[0..0]		Start Date	O	O	Ignored
9	8	DT	[0..1]	[0..0]		End Date	O	O	Ignored
10	60	ST	[0..1]	[0..0]		Next of Kin / Associated Parties Job Title	O	O	Ignored

SEQ	LEN	Data Type	CDC IG Cardinality	<System Name> Cardinality	Value set	ELEMENT NAME	CDC IG Usage	<System Name> Usage	Comment
11		JCC	[0..1]	[0..0]	0327/ 0328	Next of Kin / Associated Parties Job Code/Class	O	O	Ignored
12		CX	[0..1]	[0..0]		Next of Kin / Associated Parties Employee Number	O	O	Ignored
13		XON	[0..1]	[0..0]		Organization Name - NK1	O	O	Ignored
14		CE	[0..1]	[0..0]	0002	Marital Status	O	O	Ignored
15	1	IS	[0..1]	[0..0]	0001	Administrative Sex	O	O	Ignored
16		TS	[0..1]	[0..0]		Date/Time of Birth	O	O	Ignored
17	2	IS	[0..1]	[0..0]	0223	Living Dependency	O	O	Ignored
18	2	IS	[0..1]	[0..0]	0009	Ambulatory Status	O	O	Ignored
19		CE	[0..1]	[0..0]	0171	Citizenship	O	O	Ignored
20		CE	[0..1]	[0..0]	0296	Primary Language	O	O	Ignored
21	2	IS	[0..1]	[0..0]	0220	Living Arrangement	O	O	Ignored
22		CE	[0..1]	[0..0]	0215	Publicity Code	O	O	Ignored

SEQ	LEN	Data Type	CDC IG Cardinality	<System Name> Cardinality	Value set	ELEMENT NAME	CDC IG Usage	<System Name> Usage	Comment
23	1	ID	[0..1]	[0..0]	0136	Protection Indicator	O	O	Ignored
24	2	IS	[0..1]	[0..0]	0231	Student Indicator	O	O	Ignored
25		CE	[0..1]	[0..0]	0006	Religion	O	O	Ignored
26		XPN	[0..1]	[0..0]		Mother's Maiden Name	O	O	Ignored
27		CE	[0..1]	[0..0]	0212	Nationality	O	O	Ignored
28		CE	[0..1]	[0..0]	0189	Ethnic Group	O	O	Ignored
29		CE	[0..1]	[0..0]	0222	Contact Reason	O	O	Ignored
30		XPN	[0..1]	[0..0]		Contact Person's Name	O	O	Ignored
31		XTN	[0..1]	[0..0]		Contact Person's Telephone Number	O	O	Ignored
32		XAD	[0..1]	[0..0]		Contact Person's Address	O	O	Ignored
33		CX	[0..1]	[0..1]		Next of Kin/Associated Party's Identifiers	O	O	
34	2	IS	[0..1]	[0..0]	0311	Job Status	O	O	Ignored

SEQ	LEN	Data Type	CDC IG Cardinality	<System Name> Cardinality	Value set	ELEMENT NAME	CDC IG Usage	<System Name> Usage	Comment
35		CE	[0..1]	[0..0]	0005	Race	O	O	Ignored
36	2	IS	[0..1]	[0..0]	0295	Handicap	O	O	Ignored
37	16	ST	[0..1]	[0..0]		Contact Person Social Security Number	O	O	Ignored
38		ST	[0..1]	[0..0]		Next of Kin Birth Place	O	O	Ignored
39	2	IS	[0..1]	[0..0]	0099	VIP Indicator	O	O	Ignored

## NK1 Field Definitions

### NK1-1 Set ID NK1 (SI) 00190

**Definition:** 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.

### NK1-2 Name (XPN) 00191

**Definition:** This field contains 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. Names can contain alphabetical characters, hyphens, apostrophes, and spaces. Refer to HL7 Table 0200 - Name Type for valid values.

**Receiving Notes:** If NK1-3 indicates that this relationship is Mother 'MTH', Father 'FTH', or Guardian 'GRD' then this name is recorded as the patient's first or second guardian. Missing guardian information is ignored if the patient is 19 or more years of age.

**Important:** Although <System Name> stores two guardian names, it can only accept one guardian record in an update; all additional guardians will be ignored.

**Sending Notes:** <System Name> will send the first and second guardian name here up to two guardians may be sent. <System Name> may be configured to indicate the name of an associated physician, or the name of the contact at an associated facility or the name of the contact at an associated IRMS.

### NK1-3 Relationship (CE) 00192

**Definition:** This field contains the actual personal relationship that the next of kin/associated party has to the patient. Refer to User-defined Table 0063 - Relationship for suggested values.

**Receiving Notes:** <System Name> accepts the following codes to indicate a guardian:

GRD	Guardian
MTH	Mother
FTH	Father

If no code is sent, the first next-of-kin sent is assumed to be guardian.

**Sending Notes:** <System Name> will always sent 'GRD' to indicate guardian. The registry does not store whether the guardian is a mother or a father so no 'MTH' or 'FTH' codes are sent.

In addition <System Name> may be configured to send associated IRMS, facility and physician information. The following codes may be sent:

GRD	Guardian
IRMS	IRMS
FACILITY	Facility
PHYSICIAN	Physician or Vaccinator

It is important to remember that the last three codes are only sent when the HL7 account has been configured to do so.
--

### NK1-4 Address (XAD) 00193

**Definition:** This field contains the address of the next of kin/associated party. Multiple addresses are allowed for the same person. The mailing address must be sent in the first sequence. If the mailing address is not sent, then the repeat delimiter must be sent in the first sequence.

**Receiving Notes:** This field is ignored.

**Sending Notes:** This may be sent, if it's configured for this HL7 account, and if this next-of-kin represents an IRMS, facility or physician. In which case, this address will be the same as it's recorded in the registry for this entity.

### **NK1-5 Phone Number (XTN) 00194**

**Definition:** This field contains the telephone number of the next of kin/associated party. Multiple phone numbers are allowed for the same person. The primary telephone number must be sent in the first sequence. If the primary telephone number is not sent, then the repeat delimiter must be sent in the first sequence. Refer to HL7 Table 0201 - Telecommunication Use Code and HL7 Table 0202 - Telecommunication Equipment Type for valid values.

**Receiving Notes:** Only the phone number is accepted with this field. Any fax or email addresses sent will be ignored.

**Sending Notes:** Phone number, fax number and email address are sent when known. The registry does not store fax or email addresses for guardians. These are only sent for IRMS, facility, and physician associated parties.

- Phone number is always sent in the first repeat and is designated with telecommunication equipment type 'PH'.
- Fax number is always sent in the second repeat and is designated with telecommunication equipment type 'FX'.
- Email address is always sent in the third repeat and is designated with telecommunication equipment type 'NET' and telecommunication use 'INTERNET'.

### **NK1-13 Organization Name (XON)**

**Definition:** This is the next-of-kin's organization name.

**Receiving Notes:** This field is ignored.

**Sending Notes:** This may be sent, if configured for this HL7 account, if this next-of-kin represents an IRMS, facility or physician. If sent this represents the IRMS name, the facility name, or the physician's facility name.

### **NK1-33 Next of Kin/Associated Party's Identifiers (CX)**

**Definition:** This field is used to hold ids that may be used to identify this next-of-kin. For guardians this is usually a SSN, for associated parties such as IRMS', facilities, and physicians this is the registry assigned id.

**Receiving Notes:** The guardian's SSN may be sent in this field. The identifier type code must be set to 'SS'.

**Sending Notes:** If the primary guardian has a SSN, it will be sent in the second repetition. If the next-of-kin is an IRMS, facility, or physician the registry id will be sent in the first repetition with no identifier type code defined.

## NTE—Note Segment

The NTE segment is used for sending notes and comments. It is used in relation to OBX in the VXU and RSP. It is also used in ADT in relation to various segments.

*Note Segment (NTE)*

SEQ	LEN	Data Type	CDC IG Cardinality	<System Name> Cardinality	Value Set	ELEMENT NAME	CDC IG Usage	<System Name> Usage	Comment
1	4	SI	[0..1]	[0..1]		Set ID - NTE	O	O	Ignored
2	8	ID	[0..1]	[0..1]	0105	Source of Comment	O	O	Ignored
3		FT	[1..1]	[1..1]		Comment	R	R	
4		CE	[0..1]	[0..1]	0364	Comment Type	O	O	Ignored

## NTE Field Definitions

### *NTE-3 Comment (FT) 00098*

**Definition:** This field contains the comment contained in the segment.

## OBX—Observation Result Segment

The observation result segment has many uses. It carries observations about the object of its parent segment. In the VXU/RSP it is associated with the RXA or immunization record. The basic format is a question (OBX-3) and an answer (OBX-5).

**Observation Segment (OBX)**

SEQ	LEN	Data Type	CDC IG Cardinality	<System Name> Cardinality	Value Sets	ELEMENT NAME	CDC IG Usage	<System Name> Usage	Comment
1	4	SI	[1..1]	[1..1]		Set ID – OBX	R	R	
2	2	ID	[1..1]	[1..1]	0125	Value Type	R	R	CE, NM, ST, DT, or TS
3		CE	[1..1]	[1..1]		Observation Identifier	R	R	This indicates what this observation refers to. It poses the question that is answered by OBX-5.
4	20	ST	[1..1]	[1..1]		Observation Sub-ID	RE	RE	Not implemented yet
5		var <sup>2</sup>	[1..1]	[1..1]		Observation Value	R	R	This is the observation value and answers the question posed by OBX-3
6		CE	[0..1]	[0..1]		Units	CE	CE	If the observation in OBX-5 requires an indication of the units, they are placed here.
7	60	ST	[0..1]	[0..1]		References Range	O	O	

---

<sup>2</sup> The length of the observation field is variable, depending upon value type. See *OBX-2 value type*.

SEQ	LEN	Data Type	CDC IG Cardinality	<System Name> Cardinality	Value Sets	ELEMENT NAME	CDC IG Usage	<System Name> Usage	Comment
8	5	IS	[0..1]	[0..1]	0078	Abnormal Flags	O	O	
9	5	NM	[0..1]	[0..0]		Probability	O	O	Ignored
10	2	ID	[0..1]	[0..0]	0080	Nature of Abnormal Test	O	O	Ignored
11	1	ID	[1..1]	[1..1]	0085	Observation Result Status	R	R	Constrain to F
12		TS	[0..1]	[0..0]		Effective Date of Reference Range Values	O	O	Ignored
13	20	ST	[0..1]	[0..0]		User Defined Access Checks	O	O	Ignored
14		TS	[1..1]	[1..1]		Date/Time of the Observation	R	R	
15		CE	[0..1]	[0..1]		Producer's Reference	O	O	
16		XCN	[0..1]	[0..0]		Responsible Observer	O	O	Ignored
17		CE	[0..1]	[0..0]		Observation Method	O	O	Ignored
18		EI	[0..1]	[0..0]		Equipment Instance Identifier	O	O	Ignored

SEQ	LEN	Data Type	CDC IG Cardinality	<System Name> Cardinality	Value Sets	ELEMENT NAME	CDC IG Usage	<System Name> Usage	Comment
19		TS	[0..1]	[0..0]		Date/Time of the Analysis	O	O	Ignored
20			[0..1]	[0..0]		Reserved for harmonization with V2.6	O	O	Ignored
21			[0..1]	[0..0]		Reserved for harmonization with V2.6	O	O	Ignored
22			[0..1]	[0..0]		Reserved for harmonization with V2.6	O	O	Ignored
23		XON	[0..1]	[0..0]		Performing Organization Name	O	O	Ignored
24		XAD	[0..1]	[0..0]		Performing Organization Address	O	O	Ignored
25		XCN	[0..1]	[0..0]		Performing Organization Medical Director	O	O	Ignored

## OBX Field Definitions

### OBX-1 Set ID OBX (SI) 00569

**Definition:** This field contains the sequence number. The first instance shall be set to 1 and each subsequent instance shall be the next number in sequence.

### OBX-2 Value Type (ID) 00570

**Definition:** This field contains the data type which defines the format of the observation value in OBX-5. The possible types are defined in table HL7025. (e.g., If the value is CE then OBX-5 must be a coded entry.)

### OBX-3 Observation Identifier (CE) 00571

**Definition:** This field contains a unique identifier for the observation. The format is that of the Coded Element (CE). Example: |30963-3^Vaccine purchased with^LN|.

In most systems the identifier will point to a master observation table that will provide other attributes of the observation that may be used by the receiving system to process the observations it receives. This may be thought of as a question that the observation answers. In the example above, the question is “how was this immunization paid for” The answer in OBX-5 could be “Public Funding”.

#### Receiving Notes:

OBX is used for the following purposes:

- To indicate additional data in VXU messages.
- To communicate immunization messages from a Logician system.
- To include Lead lab results.

Observations in VXU messages can be used to include additional information that is not currently supported by RXA or RXR segments. These extra values have specific identifiers that must be set properly in order for <System Name> to recognize them. The value types may be customized for every installation of <System Name>. The following table gives the default value types and the IWeb Key that the customized value may be stored under. Unless otherwise directed, assume that the value type listed here is the one <System Name> is expecting:

IDENTIFIER	DESCRIPTION	IWEB KEY
1648-5	TB Induration	hl7.obs.tb_induration.id
30945-0	Contraindication	hl7.obs.contraindication.id

<b>IDENTIFIER</b>	<b>DESCRIPTION</b>	<b>IWEB KEY</b>
30963-3	Publicly Supplied	hl7.obs.publicly_supplied.id
29768-9	VIS Form Date	hl7.obs.vis_form_date.id
29769-7	VIS Form Given Date	hl7.obs.vis_form_given_date.id

Observation segments in observation messages may include lead data. The following identifiers represent lead lab results:

**Value Type**

5671-3

9051

11018

LEADB

PBX

14807-2

17052-2

10912-4

25459-9

10368-9

5674-7

27129-6

32325-3

### Value Type

755660

11019

Observation identifiers for Logician must be defined by each interface. Please see "How to Configure Logician" in the STC IWeb HL7 Interface Specification for more information.

**Sending Notes:** <System Name> will send observation segments with VXU messages. <System Name> does not send observation messages.

The following identifiers can be sent in OBX segments in association with an RXA segment:

Value Type	Description	IWeb Key
1648-5	TB Induration	hl7.obs.tb_induration.id
30945-0	Contraindication	hl7.obs.contraindication.id
30963-3	Publicly Supplied	hl7.obs.publicly_supplied.id
29768-9	VIS Form Date	hl7.obs.vis_form_date.id
29769-7	VIS Form Given Date	hl7.obs.vis_form_given_date.id

The identifier may be different for a particular IWeb installation. The values shown are defaults. An unrecognized identifier will raise a warning.

### **OBX-5 Observation Value (varies) 00573**

**Definition:** This field contains the value observed by the observation producer. [OBX-2-value type](#) contains the data type for this field according to which observation value is formatted.

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

Please see [Appendix B](#) for detailed information on VFC and Lot Tracking.

**Receiving Notes:** For VXU messages the values will be read as code tables. For ORU messages with lead lab results the values will be read as numeric. For ORU messages from Logician, the values will be read as textual data--except where "code-value" mapping is used in which case OBX-5 is used to map a single identifier to more than one CPT code.

**Sending Notes:** For VXU and VXR messages <System Name> always sends coded elements with code, text, and table. <System Name> will not send Logician formatted messages.

### **OBX-6 Units (CE) 00574**

**Definition:** This field contains the units of the data received in OBX-5 field and is only used for receiving lead lab results.

### **OBX-7 Reference Range (CE) 00575**

**Definition:** This is only used for receiving lead lab results.

### **OBX-8 Abnormal Flags (DT) 00576**

**Definition:** This is only used for reporting lead lab results.

### **OBX-11 Observation Result Status (ID) 00579**

**Definition:** This field contains the observation result status. The expected value is "F".

### **OBX-14 Date/Time of the Observation (TS) 00582**

**Definition:** Records the time of the observation. It is the physiologically relevant date-time or the closest approximation to that date-time of the observation.

**Receiving Notes:** For Observation (ORU) lab messages this indicates the date and time when the lab test was run. For Observation (ORU) messages from Logician this indicates the date when the vaccination was given. The time component is ignored since it indicates the time of day when the data was entered.

**Sending Notes:** This will not be sent.

## **ORC—Order Request Segment**

The Common Order segment (ORC) is used to transmit fields that are common to all orders (all types of services that are requested). While not all immunizations recorded in an immunization message are able to be associated with an order, each RXA must be associated with one ORC, based on HL7 2.5.1 standard.

For messages conforming to the 2.3.1 standard, this segment is optional.

**Common Order Segment (ORC)**

SEQ	LEN	Data Type	CDC IG Cardinality	<System Name> Cardinality	Value Set	ELEMENT NAME	CDC IG Usage	<System Name> Usage	Comment
1	2	ID	[1..1]	[1..1]	0119	Order Control	R	R	use RE
2		EI	[0..1]	[0..1]		Placer Order Number	RE	RE	See Guidance below.
3		EI	[1..1]	[1..1]		Filler Order Number	R	R	See Guidance below.
4		EI	[0..1]	[0..1]		Placer Group Number	O	O	Ignored
5	2	ID	[0..1]	[0..1]	0038	Order Status	O	O	Ignored
6	1	ID	[0..1]	[0..1]	0121	Response Flag	O	O	Ignored
7		TQ	[0..0]	[0..0]		Quantity/Timing	X	X	Ignored
8		EIP	[0..1]	[0..1]		Parent	O	O	Ignored
9		TS	[0..1]	[0..1]		Date/Time of Transaction	O	O	Ignored
10		XCN	[0..1]	[0..1]		Entered By	RE	RE	This is the person that entered this immunization record into the system. (Not yet implemented)
11		XCN	[0..1]	[0..1]		Verified By	O	O	Ignored

SEQ	LEN	Data Type	CDC IG Cardinality	<System Name> Cardinality	Value Set	ELEMENT NAME	CDC IG Usage	<System Name> Usage	Comment
12		XCN	[0..1]	[0..1]		Ordering Provider	RE	RE	This shall be the provider ordering the immunization. It is expected to be empty if the immunization record is transcribed from a historical record.
13		PL	[0..1]	[0..1]		Enterer's Location	O	O	Ignored
14		XTN	[0..1]	[0..1]		Call Back Phone Number	O	O	Ignored
15		TS	[0..1]	[0..1]		Order Effective Date/Time	O	O	Ignored
16		CE	[0..1]	[0..1]		Order Control Code Reason	O	O	Ignored
17		CE	[0..1]	[0..1]		Entering Organization	O	O	This is the provider organization that entered this record/order. (Not yet supported)
18		CE	[0..1]	[0..1]		Entering Device	O	O	Ignored
19		XCN	[0..1]	[0..1]		Action By	O	O	Ignored

SEQ	LEN	Data Type	CDC IG Cardinality	<System Name> Cardinality	Value Set	ELEMENT NAME	CDC IG Usage	<System Name> Usage	Comment
20		CE	[0..1]	[0..1]	0339	Advanced Beneficiary Notice Code	O	O	Ignored
21		XON	[0..1]	[0..1]		Ordering Facility Name	O	O	
22		XAD	[0..1]	[0..1]		Ordering Facility Address	O	O	
23		XTN	[0..1]	[0..1]		Ordering Facility Phone Number	O	O	
24		XAD	[0..1]	[0..1]		Ordering Provider Address	O	O	Ignored
25		CWE	[0..1]	[0..1]		Order Status Modifier	O	O	Ignored
26		CWE	[0..1]	[0..1]	0552	Advanced Beneficiary Notice Override Reason	O	O	Ignored
27		TS	[0..1]	[0..1]		Filler's Expected Availability Date/Time	O	O	Ignored
28		CWE	[0..1]	[0..1]	0177	Confidentiality Code	O	O	Ignored
29		CWE	[0..1]	[0..1]	0482	Order Type	O	O	Ignored

SEQ	LEN	Data Type	CDC IG Cardinality	<System Name> Cardinality	Value Set	ELEMENT NAME	CDC IG Usage	<System Name> Usage	Comment
30		CNE	[0..1]	[0..1]	0483	Enterer Authorization Mode	O	O	Ignored
31		CWE	[0..1]	[0..1]		Parent Universal Service Identifier	O	O	Ignored

## ORC Field Definitions

### ORC-1 Order Control (ID) 00215

**Definition:** Determines the function of the order segment.

The value for VXU and RSP shall be RE.

Placer Order Number (ORC-2) and Filler Order Number (ORC-3) are unique identifiers from the system where an order was placed and where the order was filled. They were originally designed for managing lab orders. These fields have a usage status of Conditional in Version 2.5.1. The condition for each is that they must be present in either the OBR or ORC of a message. There has been confusion about usage for these fields. The Orders and Observations workgroup has addressed this confusion. In the context that ORC will be used in Immunization messaging either ORC-2 or ORC-3 must be populated. They may both be populated.

In the immunization context, it is not common to have one system placing and one filling an immunization order. In some cases neither is known. The use case that these have supported is to allow a system that sent an immunization record to another system to identify an immunization that needs to be changed using the Filler Order Number it had sent.

This Guide specifies that Placer Order Number is RE (required, but may be empty). The Filler Order Number SHALL be the unique immunization id of the sending system.

### **ORC-2 Placer Order Number (EI) 00216**

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

ORC-2 is a system identifier assigned by the placer software application. The Placer Order Number and the Filler Order Number are essentially foreign keys exchanged between applications for uniquely identifying orders and the associated results across applications. In the case where the ordering provider organization is not known, the sending system may leave this field empty.

**Receiving Notes:** This field is not yet supported.

### **ORC-3 Filler Order Number (EI) 00217**

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

This shall be the unique identifier of the sending system in a given transaction. In the case where system A sends the record to system B and system B then forwards to system C, system B will send its' own unique identifier. Use of this foreign key will allow the initiating system to identify accurately the previously sent immunization record, facilitating update or deletion of that record. In the case where a historic immunization is being recorded (i.e., from an immunization card), the sending system SHALL assign an identifier as if it were an immunization administered by a provider associated with the provider organization owning the sending system. In the case where an RXA is conveying information about an immunization that was not given (e.g., refusal) the filler order number shall be 9999. Note that the receiving system will need to store this value in addition to its own internal id in order for this to be used.

### **ORC-12 Ordering Provider (XCN) 00226**

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

### **ORC-21 Ordering Facility Name (XON) 01311**

**Definition:** This field contains the name of the facility placing the order. It is the organization sub-unit that ordered the immunization. (i.e., the clinic)

### **ORC-22 Ordering Facility Address (XAD) 01312**

**Definition:** This field contains the address of the facility requesting the order.

### ***ORC-23 Ordering Facility Phone Number (XTN) 01312***

**Definition:** This field contains the phone number of the facility requesting the order.

### **PD1—Patient Demographic Segment**

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

**Patient Demographic Segment (PD1)**

SEQ	LEN	Data Type	CDC IG Cardinality	<System Name> Cardinality	Value Set	ELEMENT NAME	CDC IG Usage	<System Name> Usage	Comment
1	2	IS	[0..1]	[0..1]	0223	Living Dependency	O	O	Ignored
2	2	IS	[0..1]	[0..1]	0220	Living Arrangement	O	O	Ignored
3	250	XON	[0..1]	[0..1]		Patient Primary Facility	O	O	Primary facility name and Id
4	250	XCN	[0..1]	[0..1]		Patient Primary Care Provider Name & ID No.	O	O	Primary Physician name and Id
5	2	IS	[0..1]	[0..1]	0231	Student Indicator	O	O	Ignored
6	2	IS	[0..1]	[0..1]	0295	Handicap	O	O	Ignored
7	2	IS	[0..1]	[0..1]	0315	Living Will Code	O	O	Ignored
8	2	IS	[0..1]	[0..1]	0316	Organ Donor Code	O	O	Ignored
9	1	ID	[0..1]	[0..1]	0136	Separate Bill	O	O	Ignored
10	250	CX	[0..1]	[0..1]		Duplicate Patient	O	O	
11	250	CE	[0..1]	[0..1]	0215	Publicity Code	RE	RE	
12	1	ID	[0..1]	[0..1]	0136	Protection Indicator	RE	RE	

SEQ	LEN	Data Type	CDC IG Cardinality	<System Name> Cardinality	Value Set	ELEMENT NAME	CDC IG Usage	<System Name> Usage	Comment
13	8	DT	[0..1]	[0..1]		Protection Indicator Effective Date	CE	CE	If protection indicator is valued, then this field should be valued.
14	250	XON	[0..1]	[0..1]		Place of Worship	O	O	Ignored
15	250	CE	[0..1]	[0..1]	0435	Advance Directive Code	O	O	Ignored
16	1	IS	[0..1]	[0..1]	0441	Immunization Registry Status	RE		
17	8	DT	[0..1]	[0..1]		Immunization Registry Status Effective Date	CE	CE	If the registry status field is filled, then this should be valued. Not implemented.
18	8	DT	[0..1]	[0..1]		Publicity Code Effective Date	CE	CE	If the publicity code field is filled then this field should be valued. Not implemented
19	5	IS	[0..1]	[0..1]	0140	Military Branch	O	O	Ignored
20	2	IS	[0..1]	[0..1]	0141	Military Rank/Grade	O	O	Ignored
21	3	IS	[0..1]	[0..1]	0142	Military Status	O	O	Ignored

## PD1 Field Definitions

### PD1-3 Patient Primary Facility (XON) 00756

**Definition:** This field contains the name and identifier that specifies the “primary care” healthcare facility selected by the patient. Use may be specified locally.

**Receiving Notes:** <System Name> stores two facility ids: (1) the facility id assigned by the registry when the facility record was created and (2) the facility id that was assigned by the provider. The provider’s facility id can only be set at the time the facility record was created, and the user interface does not allow for setting the provider’s facility id. This value may only be set by electronic imports.

To insert a facility record automatically via HL7, the facility id and name must be sent. If a facility with same name, but different facility id is already in the same IRMS, an exception will cause the entire message to be rejected. If the facility id has not been recorded and the name is new then the facility is automatically added. This entire process may be disabled for this HL7 connection.

The facility name is taken from the first component and the id from the third, per the XON data type definition.

**Sending Notes:** The facility name is sent if the patient is associated with a primary facility. The provider's facility id is sent if the patient is associated with a primary facility and that facility has a provider id that is known to the registry.

### PD1-4 Patient Primary Care Provider Name & ID No. (XCN) 00757

**Definition:** This field contains the provider name and id of the managed care primary care provider. This information is usually selected by the patient at the time of enrollment in the patient's managed care insurance plan. Use may be specified locally.

The physician id will be sent/read in the first component and the name in components 2-5 per the XCN data type definition

**Receiving Notes:** Multiple names are allowed for the same person. 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.

**Sending Notes:** This field will be populated if the patient is associated with a primary physician. Additional repetitions of this field may be sent for provider physician id, physician SSN or Bomex number.

### PD1-11 Publicity Code (CE) 00743

**Definition** This field indicates whether the patient should be blocked from receiving reminder/recall notices via mail. The publicity code is stored in an <System Name> patient field called BLOCK\_RECALL which flags users who should not be reminded/recalled. The HL7 code table 0215 defines a larger granularity of data than the registry supports.

**Receiving Notes:** Optional field. Code values received map in the following ways:

Publicity Code	Description	Block Recall
01	No reminder/recall	YES

Publicity Code	Description	Block Recall
02	Reminder/recall – any method	NO
03	Reminder/recall – no calls	NO
04	Reminder/recall – no calls	YES
05	Reminder/recall – no calls	YES
06	Recall only – any method	YES
07	Recall only – no calls	YES
08	Reminder/recall – to provider	YES
09	Reminder to provider	YES
10	Only reminder to provider, no recall	YES

Any other value received will result in BLOCK\_RECALL set to NO.

**Sending Notes:** Publicity code is always sent with id, text, and coding system. The following codes will be sent:

Publicity Code	Description	Block Recall
01	No reminder/recall	YES
02	Reminder/recall – any method	NO

***PD1-12 Protection Indicator (ID) 00744***

<System Name> does not currently implement this field but rather depends upon the individual providers to refrain from sending patient data to the registry when they have indicated that they do not wish to share their information.

**Definition:** This field identifies whether a person's information may be shared with others<sup>3</sup>. Specific protection policies are a local consideration (opt in or opt out, for instance). This field conveys the current state in the sending system.

The protection state must be actively determined by the clinician. If it is not actively determined, then the protection indicator shall be empty.

There are 3 states:

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

**Notes on use of Y for Protection Indicator in 2.5.1 Guide vs. earlier Guides.**

Note that the previous Implementation Guide stated that Y meant that a person's information could be shared. This was an incorrect interpretation of the use of this field. The meaning now aligns with the definition of HL7. That is, Y means data must be protected. Existing systems that use the old meaning will need to determine how they will send the correct value in a 2.5.1 message.

Note that the value sent in a message that is based on the 2.3.1 or 2.4 version of the HL7 standard shall continue to follow the old guidance. That is, Y means sharing is allowed and N means sharing is not allowed.

---

<sup>3</sup> Local policies determine how data are protected. In general, it indicates who may view the client's data. It may be as narrow as just the provider that entered the information.

**Note on Null and Empty in HL7**

See notes on null and empty fields in Chapter 3 of the CDC IG.

***PD1-13 Protection Indicator Effective Date (DT) 01566***

**Definition:** This field indicates the effective date for PD1-12 - Protection Indicator.

***PD1-16 Immunization Registry Status (IS) 01569***

**Definition:** This field indicates the patient's status in the registry. This is used to indicate patient status such as active, inactive, or moved. This field roughly corresponds to the <System Name> patient inactive code. As you can see, these two code tables are only slightly aligned and that deceased is used in IWeb Inactive Code and not the HL7 Immunization Registry Status.

**Receiving Notes:** Optional field. Immunization registry status received will be mapped in the following ways:

Immunization Registry Status		Code
A	Active	
I	Inactive	O
L	Inactive-Lost to follow-up (cannot contact)	O
M	Inactive-moved or gone elsewhere (transferred)	G
P	Inactive-permanently inactive (do not re-activate or add new entries to this record)	O
O	Other	O

**Immunization Registry Status****Code**

U Unknown

U

Notice that an active code is recorded as a blank inactive code, since the inactive code is only set when the patient is inactive.

If the inactive code is sent in the second triplet then its value will supersede the value sent in the first triplet.

See field PID-30 documentation for information about transmitting deceased status.

**Sending Notes:** The immunization registry status is sent for every patient, along with its description and code table name.

**IWeb Inactive Code****Status**

	No value	A
A	Address incorrect	L
D	Deceased	I
F	Postal forward order expired	L
M	Moved out of state	M
N	No postal forward on file	L
O	Other	O
U	Delivery unsuccessful	L

IWeb Inactive Code		Status
P	Changed to another provider	M
G	Moved or gone elsewhere	M

When sending to other STC applications or when not operating in CDC standard compliant mode, <System Name> will send the inactive code in the second triplicate. See field PID-30 documentation for information about transmitting deceased status.

## PID—Patient Identifier Segment

**Definition:** The patient identifier segment includes basic demographic information about a patient and is used by <System Name> to create the patient's demographic record and to match this patient's vaccination record with vaccination records from other providers.

- Only one PID segment should be sent per message. There should be only one patient per message.
- The PID segment is required for all update messages.
- All PID segments from update messages are processed using the same application logic, whether or not they are from a VXU message.
- Only three fields are required but additional information is needed in order to match effectively. (See deduplication.)

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

**Patient Identifier Segment (PID)**

SEQ	LEN	Data Type	CDC IG Cardinality	<System Name> Cardinality	Value Set	ELEMENT NAME	CDC IG Usage	<System Name> Usage	Comment
1	4	SI	[0..1]	[0..1]		Set ID - PID	RE	RE	
2		CX	[0..0]	[0..1]		Patient ID	X	B	Backwards compatible for 2.3.1 messages
3		CX	[1..*]	[1..*]		Patient Identifier List	R	R	
4		CX	[0..0]	[0..0]		Alternate Patient ID - 00106	X	X	
5		XPN	[1..*]	[1..*]		Patient Name	R	R	The first repetition shall contain the legal name. Multiple given names or initials are separated by spaces.
6		XPN	[0..1]	[0..1]		Mother's Maiden Name	RE	RE	
7		TS	[1..1]	[1..1]		Date/Time of Birth	R	R	Required, must have month, day and year.
8	1	IS	[0..1]	[0..1]	0001	Administrative Sex	RE	RE	M= male, F = female, O = Other, U = not determined/unspecified/unknown.
9		XPN	[0..0]	[0..1]		Patient Alias	X	B	2.3.1 messages may use this field

SEQ	LEN	Data Type	CDC IG Cardinality	<System Name> Cardinality	Value Set	ELEMENT NAME	CDC IG Usage	<System Name> Usage	Comment
10		CE	[0..*]	[0..5]	0005	Race	RE	RE	The first triplet is to be used for the alpha code. The second triplet of the CE data type for race (alternate identifier, alternate text, and name of alternate coding system) should be used for governmentally assigned numeric codes (####-#).
11		XAD	[0..*]	[0..*]		Patient Address	RE	RE	The first repetition should be the primary address.
12	4	IS	[0..0]		0289	County Code	X	X	County belongs in address field.
13		XTN	[0..*]	[0..*]		Phone Number - Home	RE	RE	The first instance shall be the primary phone number. Only one item is allowed per repetition.
14		XTN	[0..1]			Phone Number - Business	O	O	
15		CE	[0..1]	[0..1]	0296	Primary Language	O	O	EN = English, ES = Spanish.

SEQ	LEN	Data Type	CDC IG Cardinality	<System Name> Cardinality	Value Set	ELEMENT NAME	CDC IG Usage	<System Name> Usage	Comment
16		CE	[0..1]	[0..1]	0002	Marital Status	O	O	Ignored
17		CE	[0..1]	[0..1]	0006	Religion	O	O	Ignored
18		CX	[0..1]	[0..1]		Patient Account Number	O	O	Ignored
19	16	ST	[0..0]	[0..1]		SSN Number - Patient	X	B	2.3.1 backwards compatible
20		DLN	[0..0]			Driver's License Number - Patient	X	X	
21		CX	[0..0]			Mother's Identifier	X	X	
22		CE	[0..1]	[0..1]	0189	Ethnic Group	RE	RE	First triplet shall contain H, N, U if populated. Second triplet shall contain government issued code from table 0189, if populated. If both are populated, they must match logically.
23	60	ST	[0..1]	[0..1]		Birth Place	O	O	Use may be specified locally.

SEQ	LEN	Data Type	CDC IG Cardinality	<System Name> Cardinality	Value Set	ELEMENT NAME	CDC IG Usage	<System Name> Usage	Comment
24	1	ID	[0..1]	[0..1]	0136	Multiple Birth Indicator	RE	RE	The acceptable values are Y and N. If the status is undetermined, then field shall be empty.
25	2	NM	[0..1]	[0..1]		Birth Order	CE	CE	If Multiple Birth Indicator is populated with Y, then this field should contain the number indicating the person's birth order, with 1 for the first child born and 2 for the second.
26		CE	[0..1]	[0..1]	0171	Citizenship	O	O	Ignored
27		CE	[0..1]	[0..1]	0172	Veterans Military Status	O	O	Ignored
28		CE	[0..1]	[0..1]	0212	Nationality	O	O	Ignored
29		TS	[0..1]	[0..1]		Patient Death Date and Time	RE	RE	
30	1	ID	[0..1]	[0..1]	0136	Patient Death Indicator	CE	CE	If patient death date is populated, then this field should be populated.

SEQ	LEN	Data Type	CDC IG Cardinality	<System Name> Cardinality	Value Set	ELEMENT NAME	CDC IG Usage	<System Name> Usage	Comment
31	1	ID	[0..1]	[0..1]	0136	Identity Unknown Indicator	O	O	Ignored
32	20	IS	[0..1]	[0..1]	0445	Identity Reliability Code	O	O	Ignored
33		TS	[0..1]	[0..1]		Last Update Date/Time	O	O	Ignored
34		HD	[0..1]	[0..1]		Last Update Facility	O	O	Ignored
35		CE	[0..1]	[0..1]	0446	Species Code	O	O	Ignored
36		CE	[0..1]	[0..1]	0447	Breed Code	O	O	Ignored
37	80	ST	[0..1]	[0..1]		Strain	O	O	Ignored
38		CE	[0..1]	[0..1]	0429	Production Class Code	O	O	Ignored
39		CWE	[0..1]	[0..1]	0171	Tribal Citizenship	O	O	Ignored

## PID Field Definitions

### *PID-1 Set ID PID (SI) 00104*

**Definition:** 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.

### *PID-3 Patient Identifier List (CX) 00106*

**Definition:** This required field lists one or more ids that are assigned to this patient. Each id should be identified as to type. <System Name> requires at least one id which is designated as the Medical Record Number, Chart Number, or Primary Identifier. This id is referred to as MRN and is defined as the id that is used by the sending system to identify this patient.

<System Name> stores multiple MRNs for a patient, one MRN for each provider that has reported to the registry. It is important that providers maintain internally unique MRNs and do not reassign them to other patient records, except in cases of patient record merges. In addition, care should be taken when installing new systems for providers that the MRNs remain the same, or do not clash with the previous system; e.g., if a previous reporting system assigned patient's sequential MRNs starting at 1000, it would not be good to replace it with a new system that reassigned patients with new MRNs also starting at 1000.

The registry stores two provider ids: (1) MRN and (2) Chart Id. The MRN must be reported electronically to <System Name> and cannot be hand-entered by users. The Chart Id however, is a user editable field that is not required to be unique. When <System Name> receives an update from a provider with a MRN, it copies this value into the patient's MRN and Chart Id field. But when it sends updates to the provider, it only submits the value in the MRN field. Users may change or erase the Chart Id field at any time and they will not affect the MRN field.

HL7 SUB-FIELD		NOTES
1	ID (ST)	The id, as assigned to the patient. This field is required.
2	Check digit (ST)	Not supported
3	Check digit scheme(ID)	Not supported
4	Assigning authority (HD)	Not supported
5	Identifier type code (IS)	Used to identify the type code. Should be sent with all ids, highly recommended when this field repeats.
6	Assigning facility (HD)	Not supported

**Receiving Notes:** <System Name> will reject this message if there is no Medical Record Number sent. By default, the registry interface assumes this to be marked by the identifier type code 'MR', but the interface may be configured to look for a specified id type code using the HL7 Upload Settings page. The MRN identifier may be blank so long as the Medical Record Number is sent in the first repetition of PID-3 and the configured value in the HL7 Upload Settings is also blank. **Please note that mismatching the MRN identifier sent in the HL7 message with the value configured in the HL7 Upload Settings is the most common cause of message rejection when setting up a new interface with the registry.**

<System Name> also reads ids marked with the following id types:

- 'SR' : State Registry ID (May be configured to different code)
- 'SS' : Social Security Number
- 'MA' : Medicaid Number
- 'BR' : Birth File Number
- 'MPI' : Master Patient Id

Maximum length of patient identifiers are listed in the table:

MAXIMUM LENGTH	PATIENT IDENTIFIER
30	'MR': Medical Record Number
30	'SR': State Registry ID
9	'SS': Social Security Number
16	'MA': Medicaid Number
16	'BR': Birth File Number
30	'MPI': Master Patient Id
	<b>Note:</b> This must be a positive integer

**Sending Notes:** The registry holds two primary identifiers for a patient: (1) the State Registry Id and (2) the provider defined MRN. The State Registry Id is always reported, and by default is marked with an id type code of 'SR'. This may be configured to any id type code desired if it is recorded in the HL7 Uploads Settings, the MRN is reported and by default is marked with an id type code of 'MR'. This may be configured to any id type code desired in like-manner.

<System Name> will also report the following id types, when available:

- 'SS' : Social Security Number
- 'MA' : Medicaid Number

- 'BR' : Birth File Number
- 'MPI' : Master Patient Id

**PID-5 Patient Name (XPN) 00108**

**Definition:** This required field records the patient's legal name, as it should appear in the registry. The first and last names are both required. Names that are too long will be silently truncated.

**Note:** Alias names should be sent in PID-9.

**Receiving Notes:** <System Name> will reject this message if either the first or last name is not sent. This field is not expected to repeat, but if it does the legal name should be marked with a name type code of 'L' or be placed in the first repetition with no name type code specified.

If no first name is sent and the last name contains a comma, the last name will be split and the data right of the comma and any spaces will be considered the first name and the data left of the comma will be considered the last name. This fixes problems when some users incorrectly enter first names with the last name.

PRODUCT	COMPONENT	DESCRIPTION	MAX. LENGTH
IWeb	5.1	Patient's Last Legal Name (Required)	48 characters (alphabetic characters, hyphens, apostrophes, and spaces.
	5.2	Patient's First Legal Name (Required)	48 characters (alphabetic characters, hyphens, apostrophes, and spaces.
	5.3	Patient's Middle Legal Name (Optional)	48 characters (alphabetic characters, hyphens, apostrophes, and spaces.

**Sending Notes:** <System Name> will always send a first and last name and will mark the name type code as 'L'. <System Name> will not send more than one name in this field.

**PID-6 Mother's Maiden Name (XPN) 00109**

**Definition:** This field is an optional field that contains the mother's maiden name. Only the last name is supported by the registry.

**Receiving Notes:** <System Name> accepts the mother's maiden name. This is used to help match patient records.

**Sending Notes:** <System Name> sends the mother's maiden name, if known.

### ***PID-7 Date/Time of Birth (TS) 00110***

**Definition:** The date of birth field is required and must not occur in the future. Any time component sent is ignored. Patients 19 years or older, will not require any guardian information; hence, “missing” guardian errors will NOT occur.

**Receiving Notes:** Messages lacking this information will be rejected.

**Sending Notes:** Always sent. No time included.

**Format:** YYYYMMDD

### ***PID-8 Administrative Sex (IS) 00111***

**Definition:** This field contains the patient's sex

**Receiving Notes:** Optional, these values are accepted:

F	Female
M	Male
O	Other
U	Unknown

**Sending Notes:** Sent if known:

F	Female
M	Male
O	Other
U	Unknown

### ***PID-9 Patient Alias (XPN) 00112***

**Definition:** This field contains other legal names the patient has been known by. Note that 2.5.1 compliant messages should send this information as repetitions of PID-5 instead of in this field.

**Receiving Notes:** Optional field.

**Sending Notes:** Sent when known.

### ***PID-10 Race (CE) 00113***

**Definition:** This optional field contains the patient's indicated race(s). This field may repeat to report multiple race codes.

**Receiving Notes:** Optional field. Up to five race codes may be submitted by repeating the field. Values accepted:

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

These values have been deprecated but may still be submitted:

U	Unknown
O	Multi-Racial
A	Asian
W	White
I	American Indian or Alaska Native
B	Black or African-American

**Sending Notes:** Sent when known. Up to five race codes may be exported. Values sent:

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

### ***PID-11 Patient Address (XAD) 00114***

**Definition:** This field contains the primary mailing address and mailing address of the patient or the patient's primary guardian. Values that are too long will be silently truncated.

**Receiving Notes:** Optional field. The first address sent is assumed to be the patient's primary and mailing address. If the patient has a PO Box, the second address should be the physical address. <System Name> only stores the physical address street one and assumes that the rest of the address is the same as the mailing address. Because of this, all other fields in the second address will be ignored.

PRODUCT	COMPONENT	DESCRIPTION	MAX. LENGTH
IWeb	11.1	Patient Address Street 1 - This field is	45 characters

		used for the patient's physical address of street 1. The system only stores the physical address street one and assumes the rest of the address is the same as the mailing address	
	11.2	Patient Address Street 2 - This field is used when the patient has a different physical address. Only the address in street one will be sent/received	45 characters
	11.3	Patient Address City	30 characters
	11.4	Patient Address State	5 characters
	11.5	Patient Address Zip Code	9 characters
	11.6	Patient's Country of Address	3 characters
	11.9	Patient's County of home address	User Defined Code Table: County

**Sending Notes:** Sent when known. The first address is always the primary or mailing address. The second address may be sent if the patient has a different physical address. In this case only the address street one will be sent and all other address sub-fields will be empty.

***PID-13 Phone Number - Home (XTN) 00116***

**Definition:** This field contains the patient's home phone number.

HL7 SUB-FIELD		NOTES
1	Fax or phone number	Format: [NNN][(999)999-9999[X999999][B999999][C any text], supported for backwards compatibility
2	Telecommunication use code (ID)	Values found in HL7 code table 0201. Only used to indicate whether this repetition contains a phone number, fax number, or email address.
3	Telecommunication equipment type (ID)	Values found in HL7 code table 0202. Used to indicate whether this repetition contains a phone number, fax number, or email address.
4	Email address (ST)	Email address.
5	Country code (NM)	Not supported
6	Area/city code (NM)	2.5.1 messages should send this information here
7	Phone number (NM)	2.5.1 messages should send this information here
8	Extension (NM)	2.5.1 messages should send this information here
9	Any text (ST)	Not supported

**Receiving Notes:** The phone number, fax number, and email address should each be sent in separate repeats. The first repeat should contain the phone number, or every repeat should have a telecommunication equipment type defined with the phone number designated as 'PH'. The fax number must be designated with telecommunication equipment type 'FX'. The email address should be designated with telecommunication equipment type 'NET' and telecommunication use 'INTERNET'.

**Sending Notes:** Phone number, fax number and email address are sent when known. Phone number is always sent in the first repeat and is designated with telecommunication equipment type 'PH'. Fax number is always sent in the second repeat and is designated with

telecommunication equipment type 'FX'. Email address is always sent in the third repeat and is designated with telecommunication equipment type 'NET' and telecommunication use 'INTERNET'.

### **PID-15 Primary Language (CE) 00118**

**Definition:** This field contains the patient's primary language.

	<b>HL7 Sub-Field</b>	<b>Notes</b>
1	Identifier (ST)	Primary language as defined by HL7 code table 0296.
2	Text (ST)	Description of the primary language.
3	Coding system (ST)	Should be 'HL70296'.
4	Alternate identifier (ST)	Not supported
5	Alternate text (ST)	Not supported
6	Alternate code system (ST)	Not supported

**Receiving Notes:** Optional. Values accepted:

EN	English
ES	Spanish

**Sending Notes:** Exported if known. Values sent:

EN	English
ES	Spanish

### **PID-19 SSN Number - Patient (ST) 00122**

**Definition:** \*This field has been retained for backward compatibility only.\* It is recommended that {PID-3 Patient Identifier List} be used to list all patient identifiers. However, in order to maintain backward compatibility this field will still be read.

### **PID-22 Ethnic Group (CE) 00125**

**Definition:** This field contains the patient's ethnic group. This is currently used to indicate Hispanic or non-Hispanic. This was previously sent as race code. This use is now deprecated.

**Receiving Notes:** Optional. Values accepted:

2186-5	Not Hispanic or Latino
2135-2	Hispanic or Latino
2131-1	Multi-Racial

Deprecated values accepted:

NH	Not Hispanic or Latino
H	Hispanic or Latino

<System Name> values accepted:

1	Hispanic or Latino
2	Not Hispanic or Latino
3	Unknown

**Sending Notes:** Exported if known. Values sent:

2186-5	Not Hispanic or Latino
2135-2	Hispanic or Latino
2131-1	Multi-Racial

### *PID-24 Multiple Birth Indicator (ID) 00127*

**Definition:** This field indicates whether this child was part of a multiple birth (e.g.,, a twin).

**Receiving Notes:** Optional. Values accepted:

Y	Yes
N	No

In order for <System Name> to properly record a multiple birth, it is necessary to know the birth count, where twins = 2, triplets = 3, etc. HL7 does not support transmitting this information. As a compromise, <System Name> will accept an ordinal number instead of the Yes to indicate a multiple birth.

Values accepted:

1	No-Single Birth
2	Yes-Twin
3	Yes-Triplet
4	Yes-Quadruplet
5	Yes-Quintuplet
6	Yes-Sextuplet
7	Yes-Septuplet
8	Yes-Octuplet
9	No-invalid value

**Sending Notes:** Exported if child is known to be part of a multiple birth. Values sent:

Y Yes

In order to export the multiple birth count, <System Name> may be configured to export the multiple birth count. Values sent:

2	Yes-Twin
3	Yes-Triplet
4	Yes-Quadruplet
5	Yes-Quintuplet
6	Yes-Sextuplet
7	Yes-Septuplet
8	Yes-Octuplet

### ***PID-25 Birth Order (NM) 00128***

**Definition:** When a patient was part of a multiple birth (i.e., twin), a value (number) indicating the patient's birth order is entered in this field. If PID-24 is populated, then this field should be populated.

### ***PID-29 Patient Death Date and Time (TS) 00740***

**Definition:** This field contains the date and time at which the patient's death occurred.

### ***PID-30 Patient Death Indicator (ID) 00741***

**Definition:** This field indicates that the child has passed away. In <System Name>, this value is stored as the patient's registry status.

**Receiving Notes:** Optional. If the patient is indicated as deceased, this value will replace any value sent in PD1-16 indicating immunization registry status. Values accepted:

Y	Yes
N	No

**Sending Notes:** Only sent when a patient is marked as deceased. Values sent:

Y	Yes
---	-----

### ***PID-33 Last Update Date/Time (TS) 01537***

**Definition:** This field contains the last update date and time for the patient's/person's identifying and demographic data, as defined in the PID segment.

## **PV1—Patient Visit Segment**

**Definition:** The Patient Visit Segment contains information about a specific visit. This is information that is expected to change on each visit. <System Name> only uses one field from this segment.

The PV1 segment is used to convey visit specific information. The primary use in immunization messages is to carry information about the client's eligibility status.

**Patient Visit (PV1)**

SEQ	LEN	Data Type	CDC IG Cardinality	<System Name> Cardinality	Value Set	ELEMENT NAME	CDC IG Usage	<System Name> Usage	Comment
1	4	SI	[0..1]	[0..1]		Set ID - PV1	O	O	If populated, this should be 1. Ignored
2	1	IS	[1..1]	[1..1]	0004	Patient Class	R	R	
3		PL	[0..1]	[0..1]		Assigned Patient Location	O	O	Ignored
4	2	IS	[0..1]	[0..1]	0007	Admission Type	O	O	Ignored
5		CX	[0..1]	[0..1]		Pre-admit Number	O	O	Ignored
6		PL	[0..1]	[0..1]		Prior Patient Location	O	O	Ignored
7		XCN	[0..1]	[0..1]	0010	Attending Doctor	O	O	Ignored
8		XCN	[0..1]	[0..1]	0010	Referring Doctor	O	O	Ignored
9		XCN	[0..1]	[0..1]	0010	Consulting Doctor	O	O	Ignored
10	3	IS	[0..1]	[0..1]	0069	Hospital Service	O	O	Ignored

SEQ	LEN	Data Type	CDC IG Cardinality	<System Name> Cardinality	Value Set	ELEMENT NAME	CDC IG Usage	<System Name> Usage	Comment
11		PL	[0..1]	[0..1]		Temporary Location	O	O	Ignored
12	2	IS	[0..1]	[0..1]	0087	Preadmit Test Indicator	O	O	Ignored
13	2	IS	[0..1]	[0..1]	0092	Re-admission Indicator	O	O	Ignored
14	6	IS	[0..1]	[0..1]	0023	Admit Source	O	O	Ignored
15	2	IS	[0..1]	[0..1]	0009	Ambulatory Status	O	O	Ignored
16	2	IS	[0..1]	[0..1]	0099	VIP Indicator	O	O	Ignored
17		XCN	[0..1]	[0..1]	0010	Admitting Doctor	O	O	Ignored
18	2	IS	[0..1]	[0..1]	0018	Patient Type	O	O	Ignored
19		CX	[0..1]	[0..1]		Visit Number	O	O	Ignored
20		FC	[1..*]	[1..*]	0064	Financial Class	R	R	
21	2	IS	[0..1]	[0..1]	0032	Charge Price Indicator	O	O	Ignored
22	2	IS	[0..1]	[0..1]	0045	Courtesy Code	O	O	Ignored

SEQ	LEN	Data Type	CDC IG Cardinality	<System Name> Cardinality	Value Set	ELEMENT NAME	CDC IG Usage	<System Name> Usage	Comment
23	2	IS	[0..1]	[0..1]	0046	Credit Rating	O	O	Ignored

## PV1 Field Definitions

### PV1-2 Patient Class (IS) 00132

**Definition:** Patient class is required by HL7, but <System Name> ignores it when receiving and sets it to 'R' for recurring patient when sending.

### PV1-20 Financial Class (FC) 00150

**Definition:** This field indicates the patient's financial class at the time of service and is used by immunization registries to indicated eligibility for Vaccines For Children (VFC) programs or other immunization reimbursement programs. This field does not indicate that the patient was or was not given publicly supplied immunizations. This must be determined at the vaccination level.

HL7 Sub-Field	Notes
1	Financial class (IS) Financial class
2	Effective date (TS) Not supported

**Receiving Notes:** Optional field. Immunization registry status received will be mapped in the following ways:

Immunization Registry Status	Code
V00	VFC eligibility not determined/unknown
V01	Not VFC eligible
V02	VFC eligible-Medicaid/Medicaid Managed Care 1
V03	VFC eligible-uninsured 2
V04	VFC eligible-American Indian/Alaskan Native 3

<b>V05</b>	VFC eligible-Federally Qualified Health Center Patient (under-insured)	4
<b>V06</b>	VFC eligible-State-specific eligibility(e.g.,S-CHIP Plan)	5, 6, 7, 8, or 9
<b>V07</b>	VFC eligible-Local-specific eligibility	

\* Additional financial codes that are not used have been omitted from this table listing.

An unknown or a not eligible code is recorded as a blank VFC Eligible code, since it is only set when the patient has a positive VFC status. State specific eligibility is coded differently depending on state configuration. Default encodings are:

<i>ASIIS</i>	6	<i>KidsCare</i>
<i>LINKS</i>	6	<i>KidsCare</i>
<i>IRIS</i>	6	<i>KidsCare</i>
<i>CHIRP</i>	7	<i>Hoosier Hwise Pkg C</i>
<i>WVSIIS</i>	8	<i>CHIP</i>
<i>IMMUNET</i>	9	<i>Healthy Kids</i>
<i>All others</i>	5	<i>Not defined</i>

**Receiving Notes:** Financial class is sent with every patient. The values are mapped as follows:

	<b>VFC Eligible</b>	<b>Status</b>
	No value	V01
<b>1</b>	Medicaid	V02
<b>2</b>	Uninsured	V03
<b>3</b>	Nat. Amer. Or Alaskan	V04
<b>4</b>	Underinsured	V05
<b>5</b>	Not defined	V06

	<b>VFC Eligible</b>	<b>Status</b>
<b>6</b>	KidsCare	V06
<b>7</b>	Hoosier Hwise Pkg C	V06
<b>8</b>	CHIP	V06
<b>9</b>	Healthy Kids	V06

The CDC immunization guide recommends that shots that are given the same day as the effective date be considered as administered under the appropriate VFC program rules as listed here. <System Name> does not consider this field since it is possible for a patient to be VFC eligible at the time of the visit but not receive a publicly supplied vaccination. VFC eligibility must be explicitly defined for each vaccination.

### **QAK—Query Acknowledgement Segment**

**Definition:** The Query Acknowledgement (QAK) segment is sent to acknowledge that a query was received.

### Query Acknowledgement Segment

SEQ	LEN	Data Type	CDC IG Cardinality	<System Name> Cardinality	Value set	ELEMENT NAME	CDC IG Usage	<System Name> Usage	Comment
1	32	ST	[1..1]	[1..1]		Query Tag	R	R	
2	2	ID	[0..1]	[0..1]	0208	Query Response Status	O	O	
3		CE	[0..1]	[0..1]	0471	Message Query Name	O	O	Ignored
4	10	NM	[0..1]	[0..1]		Hit Count	O	O	Ignored
5	10	NM	[0..1]	[0..1]		This payload	O	O	Ignored
6	10	NM	[0..1]	[0..1]		Hits remaining	O	O	Ignored

## QAK Field Definitions

### QAK-1 Query Tag (ST) 00696

**Definition:** This field contains the value sent in QPD-2 (query tag) by the initiating system, and will be used to match response messages to the originating query. The responding system is required to echo it back as the first field in the query acknowledgement segment (QAK).

### **QAK-2 Query Response Status (ID) 00708**

**Definition:** Indicates what kind of response is being returned. Here are the values that <System Name> expects and that it sends:

OK	Data found, no errors
NF	No data found, no errors
AE	Error occurred
AR	Error occurred

### **QRD: QUERY DEFINITION SEGMENT**

**Definition:** The Query Definition segment defines part of a query.

**Query Acknowledgement Segment**

SEQ	LEN	Data Type	CDC IG Cardinality	<System Name> Cardinality	Value set	ELEMENT NAME	CDC IG Usage	<System Name> Usage	Comment
1	26	TS	[1..1]	[1..1]		Query date/time	R	R	Echoed back in response
2	1	ID	[1..1]	[1..1]	0106	Query format code	R	R	Assumed to be R
3	1	ID	[1..1]	[1..1]	0091	Query priority	R	R	Assumed to be I
4	10	ST	[1..1]	[1..1]		Query ID	R	R	Echoed back in response
5	1	ID	[0..1]	[0..1]	0107	Deferred response type	O	O	Ignored
6	26	TS	[0..1]	[0..1]		Deferred response date/time	O	O	Ignored
7	10	CQ	[1..1]	[1..1]	0126	Quantity limited request	R	R	
8	60	XCN	[1..*]	[1..*]		Who subject filter	R	R	
9	60	CE	[1..*]	[1..*]	0048	What subject filter	R	R	
10	60	CE	[1..*]	[1..*]		What department data code	R	R	

## QRD Field Definitions

### QRD-1: Query Date/Time

**Definition:** The date and time the query was made. <System Name> reads this value only to put it in the response as required by HL7; otherwise, <System Name> ignores this value.

### QRD-2: Query Format Code

**Definition:** <System Name> expects this to always be 'R' for Record. If not it is assumed to be 'R', <System Name> essentially ignores this field and will always send 'R'.

### QRD-3: Query Priority

**Definition:** <System Name> expects this to always be 'I' for Immediate. If not it is assumed to be 'I'. <System Name> essentially ignores this field and will always send 'I'.

### QRD-4: Query Id

**Definition:** Query ID is required by HL7 and <System Name> will report it back in the query response just as HL7 specifies. <System Name> does not use the query id for any other purpose.

### QRD-7: Quantity Limited Request

**Definition:** The Quantity Limited Request is the maximum number of records that should be returned. <System Name> has an internal maximum with a default of 20. The maximum number returned is the lesser of this value and the internal maximum. The internal maximum can be changed by the <System Name> administrator.

This application does not support any other limiting units and therefore ignores any supplied.

### QRD-8: Who Subject Filter (XCN)

**Definition:** The Who Subject Filter is part of the name of the patient to search by. <System Name> expects at least part of the patient name to appear here. Different searches will be performed depending on how complete this information is. The patient id and type can be supplied in components 1 and 13 respectively, and may be the patient MRN (usually denoted by MR, but is configurable) or State Registry id (usually type SR, also configurable).

### **QRD-9: What Subject Filter (CE)**

**Definition:** The What Subject Filter indicates what query to run. <System Name> supports two query methods:

- **VXI** : Standard CDC defined query for immunization registries
- **ZVXI-IRMS**: STC defined query for requested a batch of updates

The VXI query is defined in the CDC 2.3.1 Implementation Guide.

**Receiving Notes:** The ZVXI-IRMS will initiate a batch update for the system querying. The result of this query will be an acknowledgment that the query was successful and a text message (human readable) indicating how many patients were selected for the batch. The connection is closed and the patients are sent via a new connection to the system that queried. The connection is chosen based on the sending application and sending facility in the message headers. The <System Name> administrator has to setup the return connection with a matching sending application and sending facility.

Local <System Name> uses both the VXI and ZVXI-IRMS queries to synchronize registries together.

If an unsupported subject filter is received, the message will be rejected.

### **QRD-10: What Department Data Code (CE)**

**Definition:** Can include drug code, item number, etc., consistent with the subject in QRD-9. Can contain multiple occurrences separated by repetition delimiters.

This is required by HL7 but is ignored by <System Name>.

### **QRF: QUERY FILTER SEGMENT**

**Definition:** The Query Filter segment modifies the query definition by limiting what is returned. For vaccination queries this contains additional information about the patient.

**Query Filter Segment**

SEQ	LEN	Data Type	CDC IG Cardinality	<System Name> Cardinality	Value set	ELEMENT NAME	CDC IG Usage	<System Name> Usage	Comment
1	20	ST	[1..*]	[1..*]		Where subject filter	R	R	
2	26	TS	[0..1]	[0..1]		When data start date/time	O	O	
3	26	TS	[0..1]	[0..1]		When data end date/time	O	O	
4	60	ST	[0..*]	[0..*]		What user qualifier	O	O	
5	60	ST	[0..*]	[0..*]		Other query subject filter	O	O	
6	12	ID	[0..*]	[0..*]	0156	Which date/time qualifier	O	O	
7	12	ID	[0..*]	[0..*]	0157	Which date/time status qualifier	O	O	
8	12	ID	[0..*]	[0..*]	0158	Date/time selection qualifier	O	O	
9	60	TQ	[0..1]	[0..1]		When quantity/timing qualifier	O	O	

## QRF Field Definitions

### *QRF-1: Where Subject Filter*

**Definition:** This field is required by HL7, but is ignored by <System Name>.

### *QRF-2: When Data Start Date/Time*

**Definition:** The data start date/time is used by <System Name> to indicate the start of the range of which vaccinations should be returned. All vaccinations are updated in the registry at different times. By setting this value, only vaccinations updated on or since this date will be returned.

### *QRF-3: When Data End Date/Time*

**Definition:** The data start date/time is used by <System Name> to indicate the end of the range of which vaccinations should be returned. All vaccinations are updated in the registry at different times. By setting this value only vaccinations updated on or before this date will be returned.

### *QRF-5: Other Query Subject Filter*

**Definition:** The query subject filter repeats and the order of the repeats are important. The following values may be sent in this field:

Repeat	Field
1	Patient Social Security Number
2	Patient Birth Date
3	Patient Birth State
4	Patient Birth Number
5	Patient Medicaid Number
6	Mother Name
7	Mother Maiden Name
8	Mother Social Security Number
9	Father Name First
10	Father Social Security Number

Repeat	Field
11	Phone Number
12	Patient Address 1

**Receiving Notes:** All but the *Patient Birth Number* and *Patient Birth State* may be read by <System Name> for use in querying. The medical record number is only effective if the querying account is associated in the registry with the provider organization that was responsible for sending the MRN originally.

**Sending Notes:** When sending a query message, <System Name> may populate all fields except for *Mother Name*, *Mother Social Security Number*, *Father Name*, and *Father Social Security Number*. This is because <System Name> does not indicate or store which guardian is the mother and which is the father.

### QPD – Query Parameter Definition (Not Supported)

The QPD segment defines the parameters of the query.

This segment is not currently supported by <System Name>.

### RCP – Response Control Parameter Segment (Not Supported)

The RCP segment is used to restrict the amount of data that should be returned in response to query. It lists the segments to be returned.

This segment is not currently supported by <System Name>.

### RXA – Pharmacy/Treatment Administration Segment

**Definition:** The Pharmacy/Treatment Administration segment contains most of the vaccination information. Multiple RXA segments may be sent in every VXU message.

**Note:** “Missing” historical vaccination issues will not occur for anything except the Vaccination Date, Vaccination Code, and Vaccination Type.

There is a change requiring an ORC conflicts with the previous implementation Guide. In that, ORC is optional and in fact rarely included in a VXU. <System Name> still treats the ORC segment as optional preceding RXA segments for 2.3.1 messages.

**Pharmacy/Treatment Administration (RXA)**

SEQ	LEN	Data Type	CDC IG Cardinality	<System Name> Cardinality	Value Set	ELEMENT NAME	CDC IG Usage	<System Name> Usage	Comment
1	4	NM	[1..1]	[1..1]		Give Sub-ID Counter	R	R	Constrain to 0 (zero)
2	4	NM	[1..1]	[1..1]		Administration Sub-ID Counter	R	R	Constrain to 1, but can be 0 for 2.3.1 messages
3		TS	[1..1]	[1..1]		Date/Time Start of Administration	R	R	
4		TS	[0..1]	[0..1]		Date/Time End of Administration	RE	RE	If populated, this should be the same as Start time (RXA-3)
5		CE	[1..1]	[1..1]	0292	Administered Code	R	R	CVX code is strongly preferred.
6	20	NM	[1..1]	[1..1]		Administered Amount	R	R	If administered amount is not recorded, use 999.
7		CE	[0..1]	[0..1]		Administered Units	CE	CE	If previous field is populated by any value except 999, it is required.
8		CE	[0..1]	[0..1]		Administered Dosage Form	O	O	

SEQ	LEN	Data Type	CDC IG Cardinality	<System Name> Cardinality	Value Set	ELEMENT NAME	CDC IG Usage	<System Name> Usage	Comment
9		CE	[0..*]	[0..*]	NIP 0001	Administration Notes	RE	RE	The primary use of this field is to convey if this immunization record is based on a historical record or was given by the provider recording the immunization. All systems should be able to support this use. Other uses of this field are permitted, but need to be specified locally.
10		XCN	[0..1]	[0..1]		Administering Provider	RE	RE	This is the person who physically administered the vaccine.
11		LA2	[0..1]	[0..1]		Administered-at Location	RE	RE	
12	20	ST	[0..1]	[0..1]		Administered Per (Time Unit)	O	O	
13	20	NM	[0..1]	[0..1]		Administered Strength	O	O	
14		CE	[0..1]	[0..1]		Administered Strength Units	O	O	

SEQ	LEN	Data Type	CDC IG Cardinality	<System Name> Cardinality	Value Set	ELEMENT NAME	CDC IG Usage	<System Name> Usage	Comment
15	20	ST	[0..*]	[0..*]		Substance Lot Number	RE	RE	
16		TS	[0..1]	[0..1]		Substance Expiration Date	CE	CE	If the lot number is populated, this field should be valued.
17		CE	[0..*]	[0..*]	0227	Substance Manufacturer Name	RE	RE	
18		CE	[0..*]	[0..*]		Substance/Treatment Refusal Reason	C	C	If the Completion status is RE, then this shall be populated
19		CE	[0..1]	[0..1]		Indication	O	O	
20	2	ID	[0..1]	[0..1]	0322	Completion Status	RE	RE	If this field is not populated, it is assumed to be CP or complete. If the Refusal reason is populated, this field shall be set to RE.
21	2	ID	[0..1]	[0..1]	0323	Action Code - RXA	RE	RE	
22		TS	[0..1]	[0..1]		System Entry Date/Time	O	O	

SEQ	LEN	Data Type	CDC IG Cardinality	<System Name> Cardinality	Value Set	ELEMENT NAME	CDC IG Usage	<System Name> Usage	Comment
23	5	NM	[0..1]	[0..1]		Administered Drug Strength Volume	O	O	
24		CW E	[0..1]	[0..1]		Administered Drug Strength Volume Units	O	O	
25		CW E	[0..1]	[0..1]		Administered Barcode Identifier	O	O	
26	1	ID	[0..1]	[0..1]	0480	Pharmacy Order Type	O	O	

## RXA Field Definitions

### RXA-1 Give Sub-ID Counter (NM) 00342

**Definition:** This is required by HL7, but <System Name> ignores it. The CDC Immunization Guide recommends sending 0.

### RXA-2 Administration Sub-ID Counter (NM) 00344

**Definition:** This field indicates which dose this is within the vaccination series. Because <System Name> collects data from multiple sources, it does not explicitly record the vaccination dose. Instead a forecast mechanism dynamically marks vaccinations as valid or invalid, and indicates when further vaccinations are due.

**Receiving Notes:** Dose may be sent, but is normally ignored. If dose is unknown, send '999'. If Dose and Administered Amount (RXA-6) are set to '0', this vaccination will be considered as not administered. This "dummy" vaccination may be used to encode forecasting recommendations, contraindications, or other meta information such as immunization campaigns.

**Sending Notes:** Always sent as "999" unless a "dummy" vaccination is sent. In which case, Dose and Administered Amount (RXA-6) are both set to "0." A "dummy" vaccination may be sent when contraindications or campaigns need to be communicated.

### ***RXA-3 Date/Time Start of Administration (TS) 00345***

**Definition:** This required field indicates the date when the vaccination was given. The RXA segment has been defined to allow for specifying the start and end of IV or timed administrations, so this field indicates the start and the next field (RXA-4) indicates the end of the administration. <System Name> expects that both times are exactly the same.

**Receiving Notes:** This field is required and will result in a message rejection if not populated. Send exact dates, do not send year and month only. Time portion will be ignored.

**Sending Notes:** <System Name> will always send a full vaccine administration date with no time.

### ***RXA-4 Date/Time End of Administration (If Applies) (TS) 00346***

**Definition:** This field indicates the date when the vaccination was given. The RXA segment has been defined to allow for specifying the start and end of IV or timed administrations, so the previous field (RXA-3) indicates the start and this field indicates the end of the administration. <System Name> expects that both times are exactly the same.

**Receiving Notes:** This field is ignored.

**Sending Notes:** <System Name> will always send a full vaccine administration date with no time.

### ***RXA-5 Administered Code (CE) 00347***

**Definition:** This required field indicates the vaccination that was administered. If the substance administered is a vaccine, CVX codes should be used in the first triplet to code this field (RXA-5.1 through RXA-5.3). The second set of three components (RXA-5.4 through RXA-5.6) could be used to represent the same vaccine using CPT codes.

The first part of each triplet contains the vaccination code (5.1 and/or 5.4) and the second part of each triplet contains the vaccine description (5.2 and/or 5.5) which has a maximum limit of 60 characters.

**Receiving Notes:** This field is required. <System Name> will accept STC, CVX/CDC, or CPT codes. If multiple codes are sent, the CVX/CDC codes will trump the CPT codes, and the STC codes will trump the CVX/CDC or CPT codes. All STC codes sent must be designated with 'STC0292'. All CVX/CDC codes sent must be designated with 'CPT'. All CPT codes sent must be designated with 'CPT'. CVX/CDC codes and CPT codes may be sent in the first or second triplet. The STC codes must be sent in the first triplet.

If <System Name> is unable to determine the STC vaccination code, it can be configured to do one of three things:

1. Reject the message with an error.
2. Record the vaccination as an 'unknown' vaccination.
3. Ignore and skip the vaccination without reporting an error.

**VARICELLA HISTORY OF DISEASE.** Although history of Varicella disease is not a CDC or STC immunization code it can be submitted as a CPT or CVX/CDC code. To do this, the HL7 interface needs to be configured with the code that will be used to identify the Varicella history of disease. The recommended code is '921'. In HL7 v2.5.1 this should be sent as a contraindication in an observation on a non-administered vaccination.

**Important:** The full vaccine name (aka vaccine description) has a maximum length of 60 characters.

**Sending Notes:** <System Name> sends both CVX/CDC and CPT codes when available. The HL7 interface may be configured to only export vaccinations with a CPT code or a CVX/CDC code.

In addition, the STC code may be sent in a second repeat if the receiving application is an STC application or a non-CDC standard application. In CDC standard mode, no STC code is sent.

### *RXA-6 Administered Amount (NM) 00348*

**Definition:** This field records the amount of pharmaceutical administered. The administered units are expressed in the field, RXA - 7. Registries that do not collect the administered amount should record the value "999" in this field.

**Receiving Notes:** This field should be submitted as the actual amount or as '999' if it is unknown or is not to be reported. If this vaccination was not administered, then this should be set as '0'. See RXA-2 for more information.

**Sending Notes:** Always sent as '999' unless a "dummy" vaccination is sent. In which case, Dose (RXA-2) and Administered Amount are both set to '0'. A "dummy" vaccination may be sent when contraindications need to be communicated.

**Example Query:**

```
MSH|^~\&|DBO^QSI Insight^L|QS4444|5.0^QSI Insight^L||20030828104856+0000||VXQ^V01|QS444437861000000042|P|2.3.1|||NE|AL|
QRD|200001010000|R||201201010000||25|26^DOE^JOHN^^^^^^^^SR|VXI|SIIS
QRF|MA0000|||~20000505
```

**Example Result:**

```
MSH|^~\&|5.0^QSI Insight^L|^|DBO^QSI Insight^L|QS4444^|20120504115256||VXR^V03|4957806546.100000101|P|2.3.1|
MSA|AA|QS444437861000000042||
QRD|20000101000000|R||201201010000||25^RD|26^DOE^JOHN^^^^^^^^SR|VXI^Vaccine Information^HL70048|^SIIS|
QRF|MA0000|||~20000505|
PID|1||26^^^^SR||DOE^JOHN^^^^L||20000505|||^^^^United States|||||||||||||||||N|
PD1|||^^^^SR|^^^^^^^^SR||||||02^Reminder/recall -any method^HL70215|||||A^Active^HL70441|
```

```

NK1|1|^WHITE|GRD^Guardian^HL70063|
PV1||R|
ORC|RE||26.20.20060505|
RXA|0|999|20060505|20060505|20^DTaP^CVX^90700^DTaP^CPT~20^DTaP^STC0292|10|ML^mL^ISO+||00^New immunization
record^NIP001||IRMS-1003|||||||A|20120504115256|
RXR|OTH^Other/Miscellaneous^HL70162|
OBX|1|CE|VFC-STATUS^VFC Status^STC|||||||F|
OBX|1|DT|29769-7^date vaccine information statement presented^LN||20060505|||||||F|
ORC|RE||26.20.20060602|
RXA|0|999|20060602|20060602|20^DTaP^CVX^90700^DTaP^CPT~20^DTaP^STC0292|999|||00^New immunization
record^NIP001||IRMS-1003|||||||A|20120504115256|
RXR|OTH^Other/Miscellaneous^HL70162|
OBX|1|CE|VFC-STATUS^VFC Status^STC|||||||F|
OBX|1|DT|29769-7^date vaccine information statement presented^LN||20060602|||||||F|

```

***RXA-7 Administered Units (CE) 00349***

**Definition:** This field is conditional because it is required if the administered amount code does not imply units. This field must be in simple units that reflect the actual quantity of the substance administered. It does not include compound units. This field is not required if the previous field is populated with 999.

***RXA-9 Administration Notes (CE) 00351***

**Definition:** This field holds the information source and the free-text comments for the vaccination. The information source is used to designate whether a vaccination is historical or not. If a vaccination is known from second-hand information, such as a paper record, it is historical; otherwise, it is considered administered. The information source is very important and allows <System Name> to decide the weight it should give to reported vaccinations. The free-text comment can contain any comments made by those who ordered, administered or recorded the vaccination. This text is displayed with all the other details of a vaccination when shown to a user.

**Receiving Notes:** This field contains two values, both of them are optional. It is important to code them properly so they both can be read. The information source is sometimes called the historical/administered flag. This indicates whether the vaccination reported here was reported directly to the sending system or was reported from a secondary source, such as a paper shot record. The following codes are accepted:

00	New immunization record
01	Historical information-source unspecified

The information source should have a coding table specified. If no code is sent, the vaccination record is assumed to be a new immunization record. The HL7 interface may also be configured to force all immunizations to be marked as historically reported.

The free-text comments may be sent in any repeat, but the first sub-field must be left blank and the comment must be placed in the second subfield. Comments longer than 254 characters will be silently truncated.

Example of HL7 encodings:

```
|00^New immunization record^NIP001~^Kid fussed, gave him lollipop|
|^Referred from Pine View Peds|
|01^Historical information - source unspecified^NIP001|
```

**Sending Notes:** The information source is always sent in the first repeat, and if there are comments they are sent in the second repeat.

The interface may be configured to force all immunizations to be marked with a historical information source when exported.

### ***RXA-10 Administering Provider (XCN) 00352***

**Definition:** This field records the person who administered the vaccination. The CDC guide allows for three different persons to be recorded here: (OEI) the person who ordered the vaccination to be given, (VEI) the person who administered the vaccination, and (REI) the person who recorded the administration. <System Name> does not differentiate between these three persons and only allows one person to be recorded on an immunization record. This should be the person most knowledgeable about event and the one of which questions should be directed from other providers when there are questions about the administration.

**Receiving Notes:** This person is stored as a "physician" in the registry. A "physician" in <System Name> is not necessarily a medical doctor, but may be any person involved with the delivery of health care, specifically immunizations. The physician id is attached to the vaccination record and the physician record may be inserted into the registry. This functionality is the same as what is discussed in PD1-3. Please see the notes for this field for more information.

**Sending Notes:** Physician information is sent, if known. The first repetition contains the full physician name and the registry's id for the physician.

In addition, if <System Name> is configured to connect to another IWeb application it will send multiple repeats populated with additional physician ids: (2)

Registry id designated as 'SR'; (3) SSN designated as 'SS'; and (4) Bomex id designated as 'LN';

### RXA-11 Administered-at Location (LA2) 00353

**Definition:** This field indicates the facility where the patient received an immunization or where the immunization was recorded (if historical). The concept of facility in <System Name> is fairly general and may also be termed "organization" and has specific meaning as defined by the IRMS it belongs to. A facility in a hospital network may indicate the hospital, or even the care unit. A facility in a public health system may indicate departments, or individual clinics. The facility information is used to aggregate patient and vaccination data into reportable groups.

	HL7 SUB-FIELD	NOTES
1	Point of care	Facility Id
2	Room	
3	Bed	
4	Facility	Facility Name or Facility Id
5	Location status	
6	Patient location type	
7	Building	
8	Floor	
9	Street address	Facility address street 1
10	Other designation	Facility address street 2
11	City	Facility Address City
12	State	Facility Address State
14	Country	
15	Address type	

**Receiving Notes:** <System Name> stores two facility ids: (1) the facility id assigned by <System Name> when the facility was created and (2) the facility id that was assigned by the provider. The provider's facility id can only be set at the time the facility is created, and the user interface does not allow for setting the provider's facility interface. This value may only be set by electronic imports.

To facilitate 2.5.1 messages, the facility id may be obtained from RXA-11.4 if it is not found in RXA-11.1. There is also a configuration option to ignore anything sent in RXA-11.1, in which case the facility name and id will be taken as the value of RXA-11.4.

If the facility name and facility id are both submitted, <System Name> will review facilities in the same IRMS to determine if the facility needs to be added. If the provider's facility id is found, then no action is taken. If a facility with the same name, but different provider facility id is found, then an exception occurs and the entire message is rejected. If the facility name and provider's facility id are not present, then this facility is added. The HL7 import account may be configured to skip this facility insert step. The facility id is stored on the patient record as the patient's primary or assigned facility.

**Sending Notes:** The facility name is sent if the patient is associated with a primary facility. The provider's facility id is sent if the patient is associated with a primary facility and that facility has a provider id that is known to the registry. In addition, if <System Name> is configured to connect to another IWeb application, it will send a second repeat with the same facility name but with the facility id that the registry uses. This is not available when the interface is configured to connect to a CDC Standard version application, as it is not compliant with HL7 standards.

### ***RXA-15 Substance Lot Number (ST) 01129***

**Definition:** The Substance Lot Number is the lot number associated with the vaccination given. This is used for inventory and recall purposes. <System Name> takes all lot numbers as they are, but with one exception: Zero's and letter O's are treated as the same. So "0111" is equivalent to "o111", or "O111".

### ***RXA-16 Substance Expiration Date (TS) 01130***

**Definition:** This field contains the expiration date of the medical substance administered. It may remain empty if the dose is from a historical record.

**Note:** Vaccine expiration date does not always have a "day" component; therefore, such a date may be transmitted as YYYYMM.

### ***RXA-17 Substance Manufacturer Name (CE) 01131***

**Definition:** The Substance Manufacturer Name is the Manufacturer code or MVX code. Please use proper MVX codes. This code field may be mapped if you are using a different code set.

### ***RXA-18 Substance/Treatment Refusal Reason (CE) 01136***

**Definition:** This field contains the reason the patient refused the medical substance/treatment. Any entry in the field indicates that the patient did not take the substance. If this field is populated RXA-20, Completion Status shall be populated with RE.

### ***RXA-19 Indication (ID) (CE) 01123***

**Definition:** The Indication field contains the reason why this vaccination is needed.

This is not normally valued since the vaccinations are recommended for all patients unless contraindicated. In the original HL7 importer in <System Name> there was a misunderstanding as to what this field meant and it was assigned to the <System Name> adverse event field. As this field is not currently used it is still used by <System Name> to accept and report adverse events associated with the vaccination procedure. For accepted code values please see the Adverse Events code table.

### **RXA-20 Completion Status (ID) 01223**

**Definition:** This field indicates if the dose was successfully given. It must be populated with RE if RXA-18 is populated. If a dose was not completely administered or if the dose were not potent this field may be used to label the immunization.

### **RXA-21 Action Code – RXA (ID) 01224**

**Definition:** The Action Code indicates whether to *add*, *update*, or *delete* a vaccination.

<System Name> treats *add* and *update* as the same, duplicate vaccinations are always merged together. The registry will delete a vaccination if so indicated.

**Receiving Notes:** This field is not required and will be assumed to be *add/update* unless specified as a *delete*. It is important to send *deletes* when making a significant change to a vaccination. <System Name> identifies vaccinations by date and by code. If one of these values change, then a *delete* must be sent for the old values followed by an “*add*” for the new values; otherwise, the registry may not properly remove the incorrect entry. For example, if an MMR given on 01/03/2008 is submitted as being given on 01/03/2007 and then corrected and resent, <System Name> will not know that the new one is a match for the old one and will leave the incorrect one on the record.

*Deletes* and *adds* may be sent in the same message without a problem. The same vaccination may even be added, updated, deleted, and then added again in the same message. All *adds/updates* and *deletes* are processed in the order received. When deleting a vaccination <System Name> also records a deletion date. This is always set as the date the HL7 message was received by <System Name>.

**Sending Notes:** <System Name> will only indicate *adds* and *deletes*, but not *updates*. (*Updates* are sent, but they are always marked as *adds*.) *Deletes* may be sent if so configured. Some systems may not understand *deletes* properly and may add them to their system. Do not configure *deletes* to be sent unless the receiving system is prepared to receive them.

### **RXA-22 System Entry Date/Time (TS) 01225**

**Definition:** This field records the date/time that this record was created in the originating system.

**Receiving Notes:** This value is used to detect instances where treatment administration information is inadvertently entered multiple times by providing a unique identification field. Under usual circumstances, this value would be provided automatically by the computer system rather than being entered by a person. <System Name> autopopulates this field with the current date when it is received.

### **RXR – Pharmacy/Treatment Route Segment**

**Definition:** The Pharmacy/Treatment Route segment is used only for the route and site.

**Pharmacy/Treatment Route (RXR)**

SEQ	LEN	Data Type	CDC IG Cardinality	<System Name> Cardinality	Value Set	ELEMENT NAME	CDC IG Usage	<System Name> Usage	Comment
1		CE	[1..1]	[1..1]	0162	Route	R	R	
2		CW E	[0..1]	[0..1]	0163	Administration Site	RE	RE	
3		CE	[0..1]	[0..1]	0164	Administration Device	O	O	
4		CE	[0..1]	[0..1]	0165	Administration Method	O	O	
5		CE	[0..1]	[0..1]		Routing Instruction	O	O	Ignored
6		CW E	[0..1]	[0..1]	0495	Administration Site Modifier	O	O	Ignored

**RXR Field Definitions**

***RXR-1 Route (CE) 00309***

**Definition:** This field indicates the route used for the immunization.

	HL7 SUB-FIELD	NOTES
1	Identifier (ST)	Route
2	Text (ST)	Description of route
3	Coding system (ST)	Value as 'HL70162'
4	Alternate identifier (ST)	Not supported
5	Alternate text (ST)	Not supported
6	Alternate coding system (ST)	Not supported

***RXR-2 Administration Site (CWE) 00310***

**Definition:** This field indicates the site for the immunization given.

	HL7 SUB-FIELD	NOTES
1	Identifier (ST)	site
2	Text (ST)	Description of site
3	Coding system (ST)	Value 'HL70163'
4	Alternate identifier (ST)	Not supported
5	Alternate text (ST)	Not supported
6	Alternate coding system(ST)	Not supported

## 6. Messages for Transmitting Immunization Information

This chapter describes each of the messages used to accomplish the use cases described in Chapter 2. These messages are built from the segments described in Chapter 5, Segments and Message Details. The Segments are built using the Data Types specified in Chapter 4. Readers are referred to these chapters for specifics on these components. Issues related to segments and fields that are message specific will be addressed in this chapter.

**Supported Messages**

Message	Purpose	Related Messages	Associated Profiles	<System Name> Supported
VXU	Send Immunization History	ACK		Yes
QBP	Request Immunization History and Request Person Id	RSP	Z34^CDC	No
RSP	Respond to Request for Immunization Record and Respond to Request for Person Id	QBP	Z31^CDC Z32^CDC	No
ACK	Send Message Acknowledgement	VXU, ADT, QBP		Yes
ADT	Send Person Demographic Data	ACK		Yes

## Send Immunization History--VXU

Systems may send unsolicited immunization records using a VXU. This may be a record that is new to the receiving system or may be an update to an existing record. The following table lists the segments that are part of a VXU. Some of the optional segments are not anticipated to be used. See Appendix B for detailed activity diagrams and example messages that illustrate the processing of this message.

**VXU Segment Usage**

Segment	CDC IG Cardinality	<System Name> Cardinality	CDC IG Usage	<System Name> Usage	Comment
MSH	[1..1]	[1..1]	R	R	Every message begins with an MSH.
{{SFT }}	[0..*]	[0..*]	O	X	Not described in this Guide. May be locally specified.
PID	[1..1]	[1..1]	R	R	Every VXU has one PID segment.
PD1	[0..1]	[0..1]	RE	O	Every PID segment in VXU may have one or less PD1 segment
NK1	[0..*]	[0..*]	RE	O	The PID segment in a VXU may have zero or more NK1 segments.

Segment	CDC IG Cardinality	<System Name> Cardinality	CDC IG Usage	<System Name> Usage	Comment
PV1	[0..1]	[0..1]	RE	O	The PID segment in a VXU may have zero or one PV1 segment. Subsequent messages regarding the same patient/client may have a different PV1 segment.
PV2	[0..1]	[0..0]	O	X	Not described in this Guide. May be locally specified.
GT1	[0..1]	[0..1]	O	O	Not described in this Guide. May be locally specified.
IN1	[0..1]	[0..1]	O	O	Not described in this Guide. May be locally specified.
IN2	[0..1]	[0..1]	O	O	Not described in this Guide. May be locally specified.
IN3	[0..1]	[0..1]	O	O	Not described in this Guide. May be locally specified.
Begin Order group				Each VXU may have zero or more Order groups	
ORC	[1..*]	[1..*]	RE	RE	The PID segment in a VXU may have one or more ORC segments.
TQ1	[0..1]	[0..1]	O	O	Not described in this Guide. May be locally specified.

Segment	CDC IG Cardinality	<System Name> Cardinality	CDC IG Usage	<System Name> Usage	Comment
TQ2	[0..1]	[0..1]	O	O	Not described in this Guide. May be locally specified.
RXA	[1..1]	[1..1]	R	R	Each ORC segment in a VXU must have one RXA segment. Every RXA requires an ORC segment.
RXR	[0..1]	[0..1]	RE	RE	Every RXA segment in a VXU may have zero or one RXR segments.
OBX	[0..*]	[0..*]	RE	RE	Every RXA segment in a VXU may have zero or more OBX segments.
NTE	[0..1]	[0..1]	RE	RE	Every OBX segment in a VXU may have zero or one NTE segment.
End Order Group					

The cardinality is displayed on the association links. Note that in order for a segment to be present in a message, it must be associated with any parent segments. For example, the NTE segment can only be included in a message as a sub-segment to an OBX. Further, the OBX can only be present as a child of an RXA. Finally, a segment that is required and a child of another segment must be present if the parent is present. If the parent is not present, it is NOT permitted.

## Acknowledging a Message--ACK

The ACK returns an acknowledgement to the sending system. This may indicate errors in processing.

### *Message Acknowledgement Segment (ACK)*

Segment	CDC IG Cardinality	<System Name> Cardinality	CDC IG Usage	<System Name> Usage	Comment
MSH	(1..1)		R		
[[SFT]]	(0..1)		O		Not anticipated for use in immunization messages.
MSA	(1..1)		R		
[[ERR]]	(0..*)		RE		Include if there are errors.

**Note:** For the general acknowledgment (ACK) message, the value of MSH-9-2-Trigger event is equal to the value of MSH-9-2-Trigger event in the message being acknowledged. The value of MSH-9-3-Message structure for the general acknowledgment message is always ACK.

## 7. Query and Response Profile (QBP/RSP) (not yet implemented)

This profile is not yet implemented in <System Name>.

## 8. Change History

Refer to the Version History on page ii.

## 9. Appendix A: Code Tables

### Adverse Reaction

Value	Description
1	Adverse reaction occurred. Contact appropriate party to learn details.
10	Paralytic polio in an immunodeficient recipient
11	Paralytic polio in a vaccine-associated community case
12	Vaccine-strain polio viral infection in a non-immunodeficient recipient
13	Vaccine-strain polio viral infection in an immunodeficient recipient
14	Vaccine-strain polio viral infection in a vaccine-associated community case
15	Early on-set HIB disease
16	Inadvertent autoinoculation
17	Eczema vaccinatum
18	Generalized vaccinia
19	Progressive vaccinia
2	Anaphylaxis or anaphylactic shock
20	Erythematous or urticarial rashes
21	Post vaccinia encephalitis
22	Injection site reaction
23	Systemic reactions, e.g., immediate hypersensitivity, fever or muscle aches
24	Fetal vaccinia
25	Death
26	Other
27	Bronchiolitis

<b>Value</b>	<b>Description</b>
28	Gastroenteritis
29	Pneumonia
3	Brachial neuritis
30	Urinary tract infection
31	Seizure
4	Any sequela (including death) of events
5	Encephalopathy (or encephalitis)
6	Chronic arthritis
7	Thombocytopenic purpura
8	Vaccine-strain measles viral infection in an immunodeficient recipient
9	Paralytic polio in a non-immunodeficient recipient

### Anatomical Route

<b>Value</b>	<b>Description</b>
INTRAMUSCULAR	Intramuscular
INTRADERMAL	Intradermal
SUBCUTANEOUS	Subcutaneous
ORAL	Oral
NASAL	Nasal
IV	Intravenous
OTH	Other Miscellaneous
TD	Transdermal

## Anatomical Site

<b>Value</b>	<b>Description</b>
LEFT_ARM	Left Arm
RIGHT_ARM	Right Arm
LEFT_THIGH	Left Thigh
RIGHT_THIGH	Right Thigh
LEFT_GLUTEUS	Left Gluteus
RIGHT_GLUTEUS	Right Gluteus
NOSE	Nose
MOUTH	Mouth
LD	Left Deltoid
LVL	Left Vastus Lateralis
LLFA	Left Lower Forearm
RVL	Right Vastus Lateralis
RD	Right Deltoid
RLFA	Right Lower Forearm

## Contraindication

<b>Value</b>	<b>Type</b>	<b>Description</b>
1	EXEMPTION	Parent or Patient Refusal: Personal
2	CONTRAINDICATION	Laboratory evidence of immunity
3	CONTRAINDICATION	Anaphylactic reaction to a previous dose of the vaccine
4	CONTRAINDICATION	Anaphylactic reaction to a vaccine component

<b>Value</b>	<b>Type</b>	<b>Description</b>
5	CONTRAINDICATION	Anaphylactic reaction to streptomycin
6	CONTRAINDICATION	Anaphylactic reaction to neomycin
7	CONTRAINDICATION	Anaphylactic reaction to gelatin
8	CONTRAINDICATION	Anaphylactic reaction to bakers yeast
9	CONTRAINDICATION	Encephalopathy within 7 days after a previous dose
10	PRECAUTION	Fever of $\geq 40.5$ C (105 F) within 48 hours of previous dose
11	PRECAUTION	Collapse or shock like state within 48 hours of previous dose
12	PRECAUTION	Convulsions (seizures) within 72 hours of previous dose
13	PRECAUTION	Persistent crying lasting $\geq 3$ hours within 48 hours of prev. dose
14	PRECAUTION	Guillain-Barre syndrome (GBS) within 6 weeks
15	CONTRAINDICATION	Symptomatic HIV in recipient
16	CONTRAINDICATION	Symptomatic HIV in recipient
17	PRECAUTION	Recent administration of antibody-containing blood products
18	CONTRAINDICATION	Immunodeficiency (household contact)
19	CONTRAINDICATION	Immunodeficiency in recipient
20	PRECAUTION	Underlying unstable, evolving neurologic disorder
21	PRECAUTION	Thrombocytopenic purpura (history)
22	CONTRAINDICATION	Pregnancy of recipient
23	PRECAUTION	Pregnancy of recipient
24	CONTRAINDICATION	Weight $\leq 2000$ grams
25	PRECAUTION	Moderate or severe acute illness
26	CONTRAINDICATION	Anaphylactic reaction to Thimerosal
27	CONTRAINDICATION	Anaphylactic reaction to Polymixin B

<b>Value</b>	<b>Type</b>	<b>Description</b>
28	CONTRAINDICATION	Patient or parent report of disease
29	CONTRAINDICATION	Anaphylactic reaction to Alum
30	CONTRAINDICATION	Anaphylactic reaction to 2-Phenoxyethnol (Havrix)
31	CONTRAINDICATION	TB - untreated, active
32	CONTRAINDICATION	Previous anthrax disease
33	CONTRAINDICATION	Age < 18 years
34	CONTRAINDICATION	Eczema, history of eczema, in self or household contact
35	EXEMPTION	Parent or Patient Refusal: Religious
36	CONTRAINDICATION	Moderate or severe illness
37	CONTRAINDICATION	Medical - Not otherwise specified
38	CONTRAINDICATION	Deferred pending further medical information
39	CONTRAINDICATION	Known cardiac disease
40	CONTRAINDICATION	Hypersensitivity/Anaphylactic reaction to eggs/egg products
41	CONTRAINDICATION	5-17 yrs of age receiving aspirin/aspirin containing therapy
42	CONTRAINDICATION	History of Gullain-Barre syndrome
43	CONTRAINDICATION	Chronic underlying medical conditions, incl. asthma or reactive airway disease
44	CONTRAINDICATION	Allergic to Doxycycline
45	CONTRAINDICATION	Allergic to Ciprofloxacin
46	CONTRAINDICATION	Hypersensitivity/Anaphylactic reaction dry rubber latex
47	CONTRAINDICATION	Laboratory evidence of suppression
48	CONTRAINDICATION	Medical Condition - Immunosuppression
49	PRECAUTION	Immunodeficient close contacts

### Ethnicity Codes

Code	Old Code	SIIS Code	Description
2135-2	H	1	Hispanic or Latino
2186-5	N	2	Not Hispanic or Latino
	U	3	Unknown

### Inactive Code

Value	Description
A	Address Incorrect
D	Deceased
F	Postal Forward Order Expired
G	Moved or Gone Elsewhere
M	Moved Out of State
N	No Postal Forward on File
O	Other
P	Changed to another provider
U	Delivery Unsuccessful

### Insert Error

Value	Description
1	Invalid IRMS system id.
10	ASIIS vaccine code and CDC code vaccine code both present.

<b>Value</b>	<b>Description</b>
11	IRMS patient ID cannot be sent with CDC vaccine code.
12	Billing patient ID cannot be sent with ASIIS vaccine code.
13	CDC vaccine code not found.
14	ASIIS vaccine code not found.
15	Invalid or missing vaccination date
16	IRMS sys-pat ID combo blocked. Patient deleted from Registry.
17	Missing facility name.
18	Missing physician last name.
19	Facility exists as another IRMS_FAC_ID
2	Missing physician id.
20	Administered vaccination cannot be unspecified antigen.
21	More than one facility exists in this IRMS with same name.
22	Physician exists for facility with different irms_phys_id.
23	Multiple race code values not separated by comma.
24	Patient birthdate not allowed by registry administrative settings
3	Missing facility id.
4	Missing patient id.
5	IRMS patient ID and Billing patient ID both present.
6	Missing patient first name.
7	Missing patient last name.
8	Missing patient birth date.
9	Missing vaccine code.

### Language

Value	Description
E	English
S	Spanish

### Race Codes

Code	SIIS Code	Description
1002-5	5	American Indian or Alaska Native
2028-9	4	Asian
2076-8	7	Native Hawaiian or Other Pacific Islander
2054-5	2	Black or African American
2106-3	1	White
2135-2		Hispanic or Latino (see Ethnicity table)
2186-5		not Hispanic or Latino (see Ethnicity table)
2131-1	6	Multi-Racial
	8	Multi-racial
	9	Unknown

### Administrative Sex Codes

Code	Description
M	Female

<b>Code</b>	<b>Description</b>
F	Male
U	Unknown
O	Other

### Vaccination SIIS Codes

<b>SIIS Code</b>	<b>CPT</b>	<b>CVX</b>	<b>Description</b>
1	90701	1	DTP
2	90712	2	OPV
3	90707	3	MMR
4	90708	4	M/R
5	90705	5	Measles
6	90706	6	Rubella
7	90704	7	Mumps
8	90744	8	Hepatitis B--adol. or pediatric
9	90718	9	Td (Adult)
10	90713	10	IPV
11		11	Pertussis
12	90719		Diphtheria Toxoid
13	90389	13	TIG
14	90281	86	IG
15	90283	87	Immune globulin, (IGIV)
16	90659	16	Influenza Whole

<b>SIIS Code</b>	<b>CPT</b>	<b>CVX</b>	<b>Description</b>
17	90645	17	Hib--unspecified
19		19	BCG
20	90700	20	DTaP
21	90716	21	Varicella
22	90720	22	DTP/Hib
23	90647	49	Hib--PRP-OMP
24	90648	48	Hib--PRP-T
25	90690	25	Typhoid, oral
26	90725	26	Cholera
28	90702	28	DT (Pediatric)
29	90371	30	HBIG
30	86580	96	PPD Test
31	90732	33	Pneumococcal(PPV23)
32	90717	37	Yellow Fever
33	90733	32	Meningococcal (MPSV4)
34	90633	83	Hep A 2 dose - Ped/Adol
35	90703	35	Tetanus Toxoid, adsorbed
36	90396	36	VZIG
37	90581	24	Anthrax
38	90709	38	Rubella/Mumps
39	90735	39	Japanese Encephalitis
40	90675	18	Rabies
41	90691	101	Typhoid, ViCPs

<b>SIIS Code</b>	<b>CPT</b>	<b>CVX</b>	<b>Description</b>
42	90747	44	Hepatitis B--dialysis
43	90746	43	Hepatitis B--adult
45	90744	45	Hep B - unspecified
46	90646	46	Hib-PRP-D
47	90645	47	Hib--HbOC
48	90287	27	Botulinum Antitoxin
49	90291	29	CMVIG
50	90727	23	Plague
52	90375	34	RIG
53	90721	50	DTaP/Hib
54	90710	94	MMR/Varicella
55	57		DTP/IPV
56		42	Hepatitis B--adolescent, high risk
57	90748	51	Hep B/Hib
58	90296	12	Diphtheria antitoxin
59	90680	74	Rotavirus, tetravalent
60	90665	66	Lyme Disease
61	90658	15	Influenza Split
62	90660	111	Influenza Nasal Spray
63	90676	40	Rabies Intradermal
67	90714	113	Td Adult, Preserv Free
100	90744	8	Hep B Ped/Adol - Preserv Free
101	90744	8	Hep B Ped/Adol - W/Thimerosal

<b>SIIS Code</b>	<b>CPT</b>	<b>CVX</b>	<b>Description</b>
102	90669	100	Pneumococcal(PCV7)
103	90634	84	Hep A 3 dose - Ped/Adol
104	90636	104	Hep A/Hep B - Adult
105	90632	52	Hep A 2 dose - Adult
106		102	DTP/Hib/Hep B
107	90633	85	Hep A--unspecified
108	90656	88	Influenza--unspecified
109	90633	31	Hepatitis A- pediatric, NOS
116	90680	116	Rotavirus, pentavalent
119	90680	119	Rotavirus, monovalent
200	67		PPD Positive Result
201	59		PPD Negative Result
202	90743	43	Hep B 2 dose - Adol/Adult
203	90723	110	DTaP/Hep B/IPV
204	90713	89	Polio - unspecified
205	90732	109	Pneumococcal - unspecified
206	90701	1	DTP - unspecified
207		75	Smallpox
208	90378	93	RSV-IgIM
209	90379	71	RSV-IGIV
210	90700	106	DTaP, 5 pertussis antigens
211	90393	79	VIG Vaccinia IG
212		105	Smallpox vaccine, diluted

<b>SIIS Code</b>	<b>CPT</b>	<b>CVX</b>	<b>Description</b>
213		999	Unknown vaccine or IG
214	15		Smallpox Major Take
215	108		Smallpox No Take
216	90703	110	Tetanus toxoids, adsorbed
217	90703	112	Tetanus toxoids, NOS
218	604		Smallpox Equivocal Take
219	39		Prev. Smallpox-Childhood
220	208		Prev. Smallpox-Recall Date
221	54		Prev. Smallpox-Documented Date
222	42		Diluent
223	30		Prev. Smallpox-Adulthood
224	30		Prev. Smallpox-Not Vaccinated/Unknown
300	90384		RhIG, full-dose, intramuscular
301	90385		RhIG, mini-dose, intramuscular
302	90386		RhIG, intravenous
400	90476	54	Adenovirus, type 4, live, oral
401	90477	55	Adenovirus, type 7, live, oral
500	90288		Botulism IG, human, intravenous
600	90700	107	DTaP--unspecified
601	90692	41	Typhoid, parenteral
602	90657	15	Influenza split, 6-35 mos.
603	90658	15	Influenza split, 36 mos. and older
604		91	Typhoid, NOS

<b>SIIS Code</b>	<b>CPT</b>	<b>CVX</b>	<b>Description</b>
605	90655	15	Influenza split,6-35 mos, presv free
606	90656	15	Influenza split, 36+ mos,presv free
607	90736	121	Zoster, live
608		122	Rotavirus, NOS
901	918		Doxycycline - Adult
902	921		Doxycycline - Ped, 0 - 10 lbs
903	116		Doxycycline - Ped, 11 - 25 lbs
904	926		Doxycycline - Ped, 26 - 50 lbs
905			Doxycycline - Ped, 50 - 75 lbs
910	119		Ciprofloxacin - Adult
911	920		Ciprofloxacin - Ped, 0 - 10 lbs
912	607		Ciprofloxacin - Ped, 11 - 20 lbs
913	608		Ciprofloxacin - Ped, 21 - 30 lbs
914	976		Ciprofloxacin - Ped, 31 - 40 lbs
915	923		Ciprofloxacin - Ped, 41 - 50 lbs
916		90	Rabies NOS
917	213		Botulinum Toxoid
918	90734	114	Meningococcal Conjugate (MCV4)
919		103	Meningococcal C Conjugate
920	90698	120	DTaP/Hib/IPV
921	90715	115	Tdap
922		108	Meningococcal, NOS
923	90633	923	Hep A 2 dose - Ped/Adol 12+ mos.

<b>SIIS Code</b>	<b>CPT</b>	<b>CVX</b>	<b>Description</b>
924	90656	15	Influenza Split, 18+ yrs, presv. free
925	90649	62	HPV, quadrivalent
926	90396	117	VZIG (IND)
927			Amoxicillin - Adult
928			Amoxicillin - Ped, 0 - 10 lbs
929			Amoxicillin - Ped, 11 - 20 lbs
930			Amoxicillin - Ped, 21 - 30 lbs
931			Amoxicillin - Ped, 31 - 40 lbs
932			Amoxicillin - Ped, 41 - 50 lbs
933			Amoxicillin - Ped, 51 - 60 lbs
934			Amoxicillin - Ped, 61 - 70 lbs
935			Amoxicillin - Ped, 71 - 80 lbs
936			Amoxicillin - Ped, 81 - 90 lbs
937			Septra - Adult
938			Septra - Ped, 0 - 10 lbs
939			Septra - Ped, 11 - 20 lbs
940			Septra - Ped, 21 - 30 lbs
941			Septra - Ped, 31 - 40 lbs
942			Septra - Ped, 41 - 50 lbs
943			Septra - Ped, 51 - 60 lbs
944			Septra - Ped, 61 - 70 lbs
945			Septra - Ped, 71 - 80 lbs
946			Septra - Ped, 81 - 90 lbs

<b>SIIS Code</b>	<b>CPT</b>	<b>CVX</b>	<b>Description</b>
947			Albuterol Metered Dose Inhaler 17 GM
948			Amoxicillin 200mg Chewable
949			Atrophine Sulfate 0.4MG/ML 20ML MDV for Injection
950			Bacitracin 500U/Polymixin B 10000U Ointment 0.9 GM Packets
951			Ciproflaxacin HCL 500MG Tablets 100 Tablets per unit
952			Ciproflaxacin HCL 500MG Tablets 20 Unit of Use (10-day regimen)
953			Ciproflaxacin HCL PO Suspension 250MG/5ML 100 ML Bottle
954			Ciproflaxacin IV 400MG/200ML DSW
955			Diazepan HCL 10MG Auto-injector CSIV
956			Diazepan HCL 10MG (5MG/ML) SDL for injection CSIV
957			Dopamine HCL 400MG (80MG/ML) Vial for injection
958			Doxycycline Hyclate 100MG Tablets 100 tables per unit
959			Doxycycline Hyclate 100MG Tablets 20 units of use
960			Doxycycline Hyclate 100MG Tablets 500 tablets per unit
961			Doxycycline Hyclate Suspension 25MG/5ML 60 ML Bottle
962			Doxycycline Hyclate 100MG Powder Vial for injection
963			Epinephrine HCL 1:1000 (0.1MG/ML) 10ML SYR/NDL for injection
964			Epinephrine 1:1000 (0.3MG/ML) Auto-injector
965			Epinephrine 1:2000 (0.15MG/ML) Auto-injector
966			Erythromycin Lactobionate 500MG Powder vial for injection
967			Gentamicin Sulfate 40MG/ML (20ML) MDV for injection
968			Lorazepam HCL 2MG/ML (1ML) 22G Needle Carpuject CSIV
969			Mark 1 (Pralidoxime 600MG/Atrophine 2MG)Auto-Injector

<b>SIIS Code</b>	<b>CPT</b>	<b>CVX</b>	<b>Description</b>
970			Methylprednisolone SOD SUC 125MG (2ML) Vial for Injection
971			Morphine Sulfate 10MG/ML 1ML 25G Needle Carpuject CSII
972			Providine Iodine 10% Swab Sticks Triples
973			Pralidoxime Hydrochloride 1GM Powder Vial for Injection
974			DTaP/IPV
975			Td-IPV
976		123	Influenza, 1203

### VFC Codes

<b>Code</b>	<b>SIIS Code</b>	<b>Description</b>
V00		VFC eligibility not determined/unknown
V01		Not VFC eligible
V02	1	Medicaid
V03	2	Uninsured
V04	3	Nat. Amer. or Alaskan
V05	4	Underinsured
State-specific eligibility, depending on installation maps to one of these:		
V06	5	Default
	6	KidsCare (ASIIS, LINKS, and IRIS)
	7	Hoosier Hwise Pkg C (CHIRP)
	8	CHIP (WVSIIS)

<b>Code</b>	<b>SIIS Code</b>	<b>Description</b>
	9	Healthy Kids (IMMUNET)
		VFC eligibility not determined/unknown

## 10. Appendix B: VFC and Lot Tracking

<System Name> can track Vaccines for Children (VFC) immunization administrations and vaccine lot inventory for providers. The following information is required to support this functionality:

- Vaccine Lot Number
- Vaccine Manufacturer
- Facility/Clinic Id (if IRMS includes multiple Facility/Clinics)
- And either VFC Status (of patient at time of vaccine administration)  
- **OR** -  
Vaccine Publicly Supplied? (Yes or No)

*VFC Status* must be transmitted in an OBX segment. Here is an example of how this is sent:

```
OBX|0|ST|VFC-STATUS^VFC STATUS^STC||V01|||||F|||20051101
```

*Vaccine Publicly Supplied* must be transmitted in an OBX segment. Here is an example of how this is sent:

```
OBX|0|ST|30963-3^Vaccine purchased with^LN||Y|||||F|||20051101
```

The HL7 interface must be configured to “Track Lot Inventory” before submitting data. Currently configured Vaccine Lots will be decremented if they match the incoming vaccine code *exactly*. If the lot number is sent with a typo or the VFC status is incorrect, then the correct lot may not be decremented and no error message will be displayed. It is important to correctly configure the current lots and to transmit the vaccines given without typos.

In addition, as lots may be tracked separately for each facility the facility **MUST** be designated if lots are defined by facility.

## 11. Appendix C: Additional Fields supported for Backwards Compatibility

### FT1—Financial Transaction

A FT1 segment is normally sent as part of a Detailed Financial Transaction (DFT) Message. An FT1 represents a single billable item.

One DFT message usually represents an encounter and one or more FT1 segments represent the billable procedures. Some systems support HL7 in order to report billing information. These interfaces can be used to glean immunization data.

A few important points about DFT messages and FT1 segments:

- <System Name> accepts but never sends DFT messages.
- DFT messages are processed as a variation of the VXU message. This is because the structure is very similar. Where VXU and DFT share the same segments that same processing rules for VXU apply.
- There are two different FT1 formats that are currently in use. The biggest difference between them is where the CPT code is placed in the FT1 segment.
- DFT messages only contain a minimum of vaccination information.

**Financial Transaction Segment (FT1)**

SEQ	LEN	Data Type	HL7 Cardinality (2.3.1)	<System Name> Cardinality	Value set	ELEMENT NAME	HL7 Usage (2.3.1)	<System Name> Usage	Comment
1	4	SI		[0..1]		Set ID - FT1	O	X	Ignored
2	12	ST	[0..1]	[0..0]		Transaction ID	O	X	Ignored
3	10	ST	[0..1]	[0..0]		Transaction Batch ID	O	X	Ignored
4	26	TS	[1..1]	[1..1]		Transaction Date	R	R	
5	26	TS	[0..1]	[0..0]		Transaction Posting Date	O	X	Ignored
6	8	IS	[1..1]	[1..1]	0017	Transaction Type	R	R	
7	80	CE	[1..1]	[1..1]	0132	Transaction Code	R	R	
...									
20	120	XCN	[0..1]	[0..1]		Performed By Code	O	O	
...									
25	80	CE	[0..1]	[0..1]		Procedure Code	O	B	

## FT1 Field Definitions

### FT1-4 Transaction Date (TS)

**Definition:** The date when the procedure was completed or in this case the date the immunization was given.

**Receiving Notes:** An error message will be sent if the vaccination date has been submitted with a future date. A warning will result if the vaccination date is missing.

### FT1-6 Transaction Code (IS)

**Definition:** The transaction code is the action that should be taken for this item. Normally this indicates that the procedure should be billed, but in case of a mistake it can be used to indicate that a previously reported procedure should not be billed (because it had been sent in error).

**Receiving Notes:** Unless marked as deleted, <System Name> assumes the action is to add/update the shot.

### FT1-7 Transaction Code (CE)

**Definition:** This field indicates the code assigned by the institution for the purpose of uniquely identifying the transaction. For example, this field would be used to uniquely identify procedure, supply item, or test for charging purposes. For vaccinations a CPT code should be used

**Receiving Notes:** This is where some Misys systems report their CPT code. If the CPT is sent in this field, it is important to select "MiSys" as the application type in the HL7 settings page.

Note: The CPT code may also be sent in FT1-25 Procedure Code
--

### FT1-20 Performed By (XCN)

**Definition:** The performed by is the person who performed the procedure, in this case the vaccinator.

### FT1-25 Procedure Code (CE)

**Definition:** The procedure code may be used to indicate the CPT code.

**Receiving Notes:** If the system is "McKesson-Horizon Practice Plus" or a particular Misys system, then you will need to select this system from the application type drop-down on the <System Name> settings page. Not selecting the right application type will result in the CPT not being read. To verify that you have the right application selected review a sample message and see which field the CPT code is sent in.

## GT1: Guarantor

**Definition:** The guarantor is the person who is financially responsible for the payment of procedures performed. This person is usually the guardian and so is assumed to be so by <System Name>.

### GT1 Field Definitions

#### GT1-3 Guarantor Name

**Definition:** The guarantor name is assumed by <System Name> to be guardian name.

#### GT1-6 Guarantor Phone Number

**Definition:** The guarantor phone number and other contact information is assumed by <System Name> to be the guardian contact information.

## OBR-15: Specimen Source

**Definition:** The specimen source is the location or area where the specimen was collected from. This is important for lab tests that have results that must be interpreted based on the source of the specimen.

**Receiving Notes:** This is read for Lead lab results in Observation (ORU) messages.

## RXR-1: Route of Administration

**Definition:** Placement of the injection. For example, intramuscular, nasal, etc.

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

## RXR-2: Administration Site

**Definition:** Location of the injection.

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

## STF: Staff Identification Segment

**Definition:** This segment is used as part of HL7 messages used to change user passwords. This is to allow <System Name> to be synchronized with user authentication systems. It has no use in regular vaccination update and query messages.

### STF Field Definitions

#### STF-1: Encrypted User Id

**Definition:** This field contains the 3DES encrypted User Ids for the User of the password being changed.

HL7 SUB-FIELD	NOTES
1	User Id (CE) Encrypted User Id

### ***STF-2: Encrypted Password***

**Definition:** This field contains the 3DES encrypted new Password for the User specified in STF-1.

	<b>HL7 SUB-FIELD</b>	<b>NOTES</b>
<b>1</b>	Password (CX)	Encrypted Password

### ***ZSP: STC Patient Segment***

**Definition:** The STC Patient segment is a custom segment for sending patient information that is not captured by the standard PID, PD1, and PV1 segments. This segment is not sent if 'CDC Standard' is selected as the receiving application type. This segment may be submitted by any sending system but it is not required.

### ***ZSP Field Definitions***

#### ***ZSP-1: Facility Name***

**Definition:** Includes additional information about the facility the patient is assigned to. The PD1 segment only transmits the facility name and id. This allows for the address to be sent as well.

HL7 SUB-FIELD		NOTES
1	Point of care	Facility Id
2	Room	
3	Bed	
4	Facility	Facility Name
5	Location status	
6	Patient location type	
7	Building	
8	Floor	
9	Street address	Facility Address Street 1
10	Other designation	Facility Address Street 2
11	City	Facility Address City
12	State	Facility Address State
13	Zip	Facility Address Zip
14	Country	
15	Address type	

### **ZSP-2: Facility Phone**

**Definition:** The Facility Phone is not sent in the PD1 segment and so is available here.

May send fax and email as well.

#### **ZSP-4: COMMENT**

**Definition:** The Comment field may be sent for the patient. This differs from comments that may be made on a particular vaccination. This comment applies to the patient record as a whole and is not associated with a particular vaccination event.

#### **ZSP-5: Health District**

**Definition:** The Health District is a custom <System Name> installation designation that differentiates records from different health districts within the states. The appropriate values for this field are defined by the <System Name> administrator.

### **ZSV: STC VACCINATION SEGMENT**

**Definition:** The STC Vaccination Segment is a custom segment to hold information not sent in the RXA or RXR segment. Most of the values in this segment may now be sent via additional OBX segments.

#### **ZSV Field Definitions**

##### **ZSV-1: Facility Name**

**Definition:** The Facility Name is used to transmit additional facility ids that are not sent in the RXA.

##### **ZSV-2: Facility Phone**

**Definition:** The Facility Phone is used to transmit the facility phone, email, and fax number.

##### **ZSV-3: Comment**

**Definition:** The Comment field contains the same comment as is found in RXA-9. If both are valued then they should be given the same value. Only one is accepted.

##### **ZSV-4: Health District**

**Definition:** The Health District is a local code used by <System Name> to divide a state jurisdiction into smaller pieces. This field indicates in which health district this vaccination was given. For appropriate values please contact the <System Name> administrator.

##### **ZSV-5: Vis Given Date**

**Definition:** The VIS Given Date is the date when the Vaccine Information Sheet (VIS) was given to the patient. This may also be transmitted via an OBX segment.

### ***ZSV-6: Tb Induration Result***

**Definition:** The TB Induration Result field indicates the result of a TB Induration (take or no take). This value is sent by <System Name> but not accepted.

### ***ZSV-7: VFC Eligibility***

**Definition:** The VFC Eligibility field has the same format as PV1-20 and indicates the VFC eligibility at the time of the vaccination. This may also be sent in an OBX.

### ***ZSV-8: TB Induration***

**Definition:** The TB Induration field is only used for vaccinations that represent TB Indurations.

### ***ZSV-9: VIS Date***

**Definition:** The VIS Date field indicates the VIS publication dates and may be repeated up to four times to indicate different dates. Additional repeats will be ignored.