Idaho Immunization Reminder Information System (IRIS)
Local Implementation Guide for HL7 2.5.1 Release 1.5
Immunization Messaging

Version *3.5.9*
February 2022

Please direct all comments and questions to iris@dhw.idaho.gov

VERSION HISTORY

Version #	Implemented By	Revision Date	Reason
2.0	IRIS	December 2017	Initial Implementation of CDC IG HL7 version 2.5.1 release 1.5 and addendum
3.5.1	IRIS	December 2020	Updated MSH-7 to TS_Z data format. Updated HL7 2.5.1 Appendix A Code Sets (separate document).
3.5.9	IRIS	February 2022	– Updated IRIS contact information for data exchange – Updated Appendix A (separate document)

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1. Introduction

The Idaho Immunization Reminder Information System (IRIS) has made available an interactive user interface for authorized users to enter, query, and update patient immunization records. The Web interface makes IRIS information and functions available on desktops around the state. However, some immunization providers already store and process similar data in electronic medical record (EMR) applications and may wish to keep using those systems while also participating in the statewide central repository. Others may have different billing needs and may decide they don't want to enter data into two diverse systems. IRIS has been enhanced to accept patient and immunization information in HL7 Version 2.5.1 Release 1.5 format.

2. Background

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 ***IRIS*** HL7 data exchange interface works. They are arranged in a hierarchy of documents, each refining and constraining the HL7 Standard.

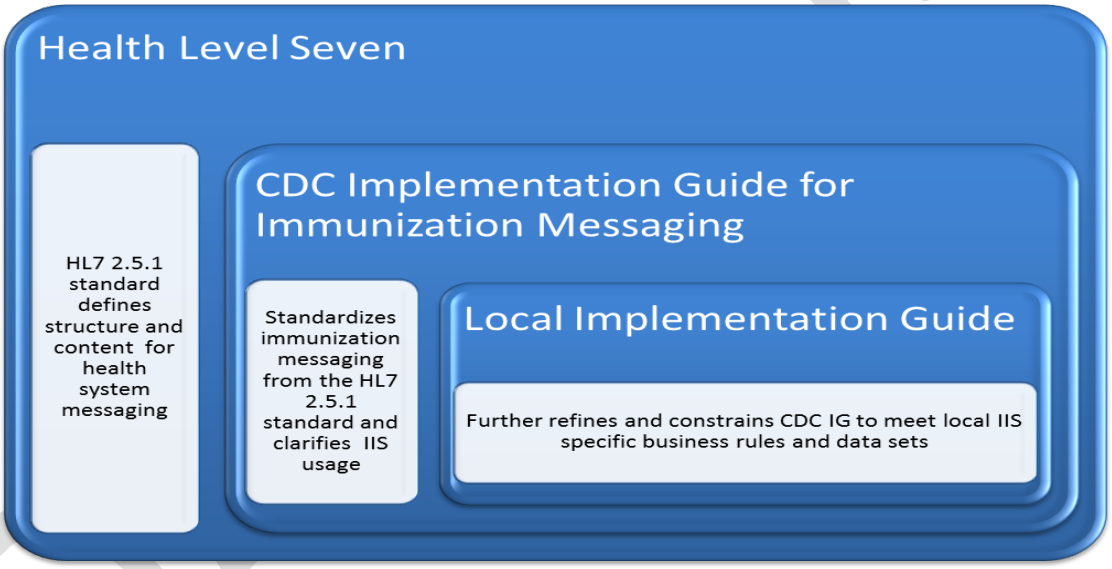


Figure 1: HL7 Controlling Document Hierarchy

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

state IIS. The second part to this guide is the **HL7 2.5.1 Implementation Guide for Immunization Messaging, Release 1.5 Addendum.** This guide and addendum as well as other technical information can be obtained from the CDC website at http://www.cdc.gov/vaccines/programs/iis/technical-guidance/hl7.html.

The third document is broken into two parts; this document and the IRIS HL7 2.5.1 Query implementation guide. These two documents finalize all implementation decisions and defines exactly what ***IRIS*** will and will not accept. They are written in accordance with the standards set in the first two documents. These guides have 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 by the local usage specification. References to elements have been eliminated in instances where information was not required in the CDC guide and is not used by IRIS.

Note: This guide is specific to data submitted in the HL7 2.5.1 Release 1.5 format. IRIS also supports data exchange in HL7 2.4 or HL7 2.5.1 Release 1.3 formats. Refer to the IRIS HL7 2.4 or IRIS HL7 2.5.1 Release 1.3 local guides for data submission requirements.

You will need to tell the Idaho Immunization Program (IIP) which version of HL7 you will be sending: HL7 2.4, HL7 2.5.1 (release 1.3) or HL7 2.5.1 Latest (release 1.5) when setting up your organization for data exchange. IRIS will process your file according to the version configured in IRIS, not the format indicated on the incoming file. The HL7 version selected for the sending organization number "tells" IRIS which parsing and business rules to apply when processing an incoming file and when generating an outbound response.

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 Immunization Information Systems (IIS) and Electronic Health Record Systems (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. Chapters 2, 3 and 4 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.

References

- Refer to Health Level 7 standard for a full description of all messages, segments, and fields. Information regarding HL7 is at http:www.hl7.org.

- The National Immunization Program within the Center for Disease Control (CDC) has published an Implementation Guide for Immunization Data with the purpose of keeping the use of HL7 for immunization data as uniform as possible. It can be found at http://www.cdc.gov/vaccines/programs/iis/technical-guidance/hl7.html listed as 'HL7 Version 2.5.1: Implementation Guide for Immunization Messaging Release 1.5' November 2014 and the Release 1.5 Addendum July 2015.
- Real Time submission requires setup with IRIS Web Services. The Idaho Web Service Setup Guide can be requested from the Idaho Immunization Program:

  IRIS Help Desk
  (208) 334-5995 (8:00 a.m. to 5:00 p.m. Monday through Friday)
  iris@dhw.idaho.gov

For instructions on how to batch data exchange with IRIS please reference Chapter 13 of the User Manual. The user manual is available from the forms section on the Home page.

Scope

This Local IG is intended to facilitate the exchange of immunization records between external Health Systems and ***IRIS***. This includes:

- Sending and receiving immunization histories for individuals
- Sending and receiving demographic information about the individuals
- Responding to requests for immunization histories by returning immunization histories **(NOTE: HL7 2.5.1 Query and Response specifications are discussed in a separate query specific local IG document.)**
- Reporting errors in the messaging process
- Sending observations about an immunization event

Organization and Flow

This chapter of the guide defines the high-level use cases supported by ***IRIS***. The subsequent chapters define how ***IRIS*** 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. 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 six use cases defined in Chapter 2 of the CDC IG. The use cases listed in the CDC IG and supported by **IRIS** are:

Use Case	Goal	Supported by *IRIS*
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.	Yes VXU – Profile Z22
Request Complete Immunization History	To request and receive a complete immunization history from another system.	Yes QBP –Profile Z34 and RSP –Profile Z32
Request Evaluated History and Forecast	To request and receive an evaluated immunization history and forecast of next doses due from another system.	Yes QBP –Profile Z44 and RSP –Profile Z42
Send Demographic Data	To send 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 ACK –Profile Z23 and RSP – Profile Z31, Z33
Report Error	To send error messages for rejection of a message as well as informational error messages based on incorrect content within segments that would not be required to process the message.	Yes ACK –Profile Z23 and RSP – Profile Z33

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.

Sending Application Conformance			
Symbol	**Definition**	**Implementation Requirement**	**Operation Requirement**
R	Required	The application **SHALL**	The application **SHALL** populate “R” elements

Sending Application Conformance			
Symbol	**Definition**	**Implementation Requirement**	**Operation Requirement**
		implement "R" elements.	with a non-empty value.
RE	Required but may be empty	The **application SHALL implement** "RE" elements.	The application **SHALL** populate "RE" elements with a non-empty value if there is relevant data. The term "relevant" has a confounding interpretation in this definition[1]
C(a/b)	Conditional	An element with a conditional usage code has an associated condition predicate that determines the operational requirements (usage code) of the element. If the condition predicate associated with the element is true, follow the rules for ***a*** which shall be one of "R", "RE", "O" or X": If the condition predicate associated with the element is false, follow the rules for ***b*** which shall be one of "R", "RE", "O" or X". ***a*** and ***b*** can be valued the same. Note: when C(O/X) or similar is used a condition predicate will not be provided.	
X	Not supported in this guide	The application (or as configured) **SHALL NOT** implement "X" elements.	The application **SHALL NOT** populate "X" elements.
O	Optional	None. The usage indicator for this element has not yet been defined. For an implementation profile all optional elements must be profiled to R, RE, C(a/b), or X.	Not Applicable

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

[1] There are multiple interpretations of "RE" when a value is known. One is "the capability must always be supported and a value is sent if known", the other is "the capability must always be supported and a value may or may not be sent even when known based on a condition external to the profile specification. The condition may be noted in the profile but cannot be processed automatically". This is what can be interpreted from the "relevant" part of the definition. Regardless of the interpretation the "RE" usage code, a set of test circumstances can be developed to sufficiently test the "RE" element. See the "Conformity Assessment of Conformance Constructs" section for more details.

will avoid potentially ambiguous situations and not attempt redefine an already clearly defined section. This guide will adhere to Chapter 4 of the CDC IG.

5. Profile Z22-Send Unsolicited Immunization Update Using a VXU

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 3.

The following diagram illustrates the relationships of the segments. 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. 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.

Table 5-1 VXU Segment Usage

Segment	Cardinality	CDC Usage	CDC Comment	IRIS Usage	IRIS Comment
FHS (File Header Segment)				C	Required if submitted as batch load. Used to mark the beginning of a file of batches. Segment may be used to group one or more batches of messages.
BHS (Batch Header Segment)				C	Required if submitted as batch load. Used at the beginning of any batch of messages. Segment wraps a group of 1 or more messages. These may be a mixture of acceptable message types.
MSH	[1..1]	R	Every message begins with an MSH.	R	
[SFT]	[0..*]	O	Not described in this Guide. May be locally specified.	Not used by IRIS	
PID	[1..1]	R	Every VXU has one	R	

Table 5-1 VXU Segment Usage					
Segment	**Cardinality**	**CDC Usage**	**CDC Comment**	**IRIS Usage**	**IRIS Comment**
			PID segment.		
[PD1]	[0..1]	RE	Every PID segment in VXU may have one or less PD1 segment.	O	
{[NK1]}	[0..*]	RE	The PID segment in a VXU may have zero or more NK1 segments.	O	
[Begin Patient Visit Group	[0..1]	O	Not described in this Guide. May be locally specified.	Not used by IRIS	
PV1	[1..1]	R		Not used by IRIS in HL7 2.5.1	Used in HL7 version 2.4
PV2	[0..1]	O		Not used by IRIS	
End Patient Visit]					
{GT1 }	[0..*]	O	Not described in this Guide. May be locally specified.	Not used by IRIS	
[Begin Insurance Group	[0..1]	C	The insurance group may not repeat.	O	Conditional – IRIS requires private Insurance information to be sent in IN1 if patient is under 19 years old on the vaccination date and is VFC Ineligible and receiving public funded vaccine.
IN1	[1..1]	R		R	IN1 is required if insurance group is being sent.
IN2	[0..1]	O	Not described in this Guide. May be	Not used by IRIS	

Table 5-1 VXU Segment Usage					
Segment	**Cardinality**	**CDC Usage**	**CDC Comment**	**IRIS Usage**	**IRIS Comment**
			locally specified.		
IN3	[0..1]	O	Not described in this Guide. May be locally specified.	Not Used by IRIS	
End Insurance Group]					
{[Begin Order Group	[0..*]	RE	Each VXU may have zero or more Order groups.	R	IRIS will not accept a VXU message without a valid immunization record (ORC group).
ORC	[1..1]	R	The order group in a VXU must have one ORC segments.	R	
[TQ1]	[0..1]	O	Not described in this Guide. May be locally specified.	Not used by IRIS	
[TQ2]	[0..1]	O	Not described in this Guide. May be locally specified.	Not used by IRIS	
RXA	[1..1]	R	Each ORC segment in a VXU must have one RXA segment. Every RXA requires an ORC segment.	R	
[RXR]	[0..1]	RE	Every RXA segment in a VXU may have zero or one RXR segments.	RE	
{[Begin Observation Group	[0..*]	RE	Every RXA segment in a VXU may have zero or more observation groups.	C	Conditional – IRIS requires VFC Eligibility information to be sent in OBX if patient is under 19 years old on the vaccination date and is receiving public funded vaccine.
OBX	[1..1]	R		R	Required if Observation group

Table 5-1 VXU Segment Usage					
Segment	**Cardinality**	**CDC Usage**	**CDC Comment**	**IRIS Usage**	**IRIS Comment**
					being sent.
[NTE]	[0..1]	RE	Every OBX segment in a VXU may have zero or one NTE segment.	Not used by IRIS	
End Observation Group]}					
End Order Group]}					
BTS (Batch Trailer Segment)			Required if message starts with BHS.	Required if message starts with BHS.	Used to mark the end of any batch of messages. If the batch starts with a BHS, then BTS is required.
FTS (File Trailer Segment)			Required to terminate a file of batches.	Required to terminate a file of batches.	Used to mark the end of a file of batches. If a file of batches begins with FHS, then FTS is required.

HL7 Message Types Used in IRIS BATCH Transmissions

IRIS uses VXU and ACK message types for batch transmissions. The VXU is used for sending new and/or updated patient demographic information and immunizations. The ACK is used to acknowledge to the sender that a message has been received. Table 5.1 above shows the segments that are used to construct each message type. Each segment is one line of text ending with the carriage return character. The carriage return is needed so that the HL7 messages are readable and printable. The messages may appear somewhat cryptic due to the scarcity of white space. (The standard has provisions for inclusion of binary data, but IRIS will not use these features.) Square brackets [ ] enclose optional segments and curly braces {} enclose segments that can be repeated. The full HL7 standard allows additional segments within these message types, but they are unused by IRIS. In order to remain compliant with HL7, their use will not result in an error, but IRIS will ignore the content of the segment. The segments that are documented here are sufficient to support the principal IRIS functions of storing data about patients and immunizations.

VXU Unsolicited Vaccination Record Update

[FHS] File Header
[BHS] Batch Header
MSH Message Header
PID Patient Identification
[PD1] Patient Additional Demographic
[{NK1}] Next of Kin / Associated Parties
[IN1] Insurance Segment (not included in files sent outbound from IRIS)
{
ORC Order Segment
RXA Pharmacy / Treatment Administration (note each RXA must have a corresponding ORC)
[RXR] Pharmacy / Treatment Route (Only one RXR per RXA segment)
[{OBX}] Observation/Result
}
[BTS] Batch Trailer
[FTS] File Trailer

ACK General Acknowledgment

MSH Message Header
MSA Message Acknowledgment
[ERR] Error

FHS—File Header Segment

Table 5-1 File Header Segment (FHS)

SEQ	Element Name	CDC IG Usage	IRISHL7 Version 2.5.1					COMMENTS/CONSTRAINT
			IRIS Len	Cardinality	Value Set (Table)	IRIS Usage	IRIS Data Type	
1	File Field Separator	R	1	[1..1]		R	ST	Required value is |
2	File Encoding Characters	R	4	[1..1]		R	ST	Required values are ^~\&
3	File Sending Application	O				O	HD	Same definition as the corresponding field in the MSH segment.
3.1	Sending Application Name	C(R/O)	95	[0…1]		O	IS	
4	File Sending Facility	O				O	HD	Same definition as the corresponding field in the MSH segment.
4.1	Sending Facility ID	C(R/O)	95	[0…1]		O	IS	IRIS Provider Organization ID of organization ***submitting*** the data exchange file. Note in Parent/Vendor setup this is the Parent/Vendor Organization. IRIS Organization ID provided by IRIS.
6	File Receiving Facility	O				O	HD	Same definition as the corresponding field in the MSH segment.
6.1	Name (IRIS)	C(R/O)	6	[1…1]		O	IS	Default 'IRIS'
7	File Creation Date/Time	O	26			O	TS_Z	Same definition as the corresponding field in the MSH segment.
7.1	Date of File	O	20	[1..1]		O	DTM	
9	File Name/ID	O	20	[0..1]		O	ST	Same definition as the corresponding field in the MSH segment.
10	File Header Comment	O	80	[0..1]		O	ST	

SEQ	Element Name	CDC IG Usage	IRISHL7 Version 2.5.1					COMMENTS/CONSTRAINT
11	File Control ID	O	20	[0..1]		O	ST	
12	Reference File Control ID	O	20	[0..1]		O	ST	

FHS field definitions

FHS-1 File Field Separator (ST) 00067

Definition: (Same definition as the corresponding field in the MSH segment.)
This field contains the separator between the segment ID and the first real field FHS-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. Required value is |, (ASCII 124).

FHS-2 File Encoding Characters (ST) 00068

Definition: (Same definition as the corresponding field in the MSH segment.)
This field contains the four characters in the following order: the component separator, repetition separator, escape characters, and subcomponent separator. The required values are ^~\& (ASCII 94, 126, 92, and 38, respectively).

FHS-3 File Sending Application (HD) 00069

Definition: (Same definition as the corresponding field in the MSH segment.)
First component (3.1) Sending Application Name. This field uniquely identifies the sending application.
When sending, IRIS will use "IRIS" followed by the current version number of the registry. This field is an optional convenience. See FSH-4 and FSH-6 for the fields principally used to identify sender and receiver of the message.

FHS-4 File Sending Facility (HD) 00070

Definition: (Same definition as the corresponding field in the MSH segment). First component (4.1) identifies who is sending the message. When sending, IRIS will use "IRIS".

When the message is being sent to IRIS and the Provider Organization owning the information is different than the organization transmitting the message (as in a Parent/Child or Vendor/Client relationship), you must use the IRIS Provider ID of the Provider Organization that is **submitting** the information (i.e. Parent or Vendor). Contact the IRIS Help Desk for the appropriate organization ID.

FHS-6 File Receiving Facility (HD) 00072

Definition: (Same definition as the corresponding field in the MSH segment.)
First component (6.1) identifies the message receiver. "IRIS" should be used for messages to be received by IRIS.

FHS-7 File Creation Date/Time (TS) 00073

Definition: (Same definition as the corresponding field in the MSH segment.)
First component (7.1) date and time the message was created. IRIS ignores any time component. See the TS data type. Same definition as the corresponding field in the MSH segment.

FHS-9 File Name/ID (ST) 00075

Definition: Name of the file as transmitted from the initiating system.

FHS-10 File Header Comment (ST) 00076

Definition: Free text, which may be included for convenience, but has no effect on processing.

FHS-11 File Control ID (ST) 00077

Definition: This field is used to identify a particular file uniquely among all files sent from the sending facility identified in FHS-4.

FHS-12 Reference File Control ID (ST) 00078

Definition: Contains the value of FHS-11-file control ID when this file was originally transmitted. Not present if this file is being transmitted for the first time.

FHS segment Example

FHS|^~\&|MYEHR|36||IRIS|20120302||filename1.hl7|WEEKLY HL7 UPLOAD|00009972

BHS—Batch Header Segment

Table 5-2 Batch Header Segment (BHS)

SEQ	Element Name	CDC IG Usage	IRIS HL7 Version 2.5.1					COMMENTS/CONSTRAINT
			IRIS Len	Cardinality	Value Set (Table)	IRIS Usage	IRIS Data Type	
1	Batch Field Separator	R	1	[1..1]		R	ST	The BHS.1 field shall be |
2	Batch Encoding Characters	R	4	[1..1]		R	ST	The BHS.2 field shall be ^~\&
3	Batch Sending Application	O				O	HD	Same definition as the corresponding field in the MSH segment.
3.1	Sending Application Name	O	95	[0..1]		O	IS	
4	Batch Sending Facility	O				O	HD	Same definition as the corresponding field in the MSH segment.
4.1	Sending Facility ID	C(R/O)	95	[0..1]		O	IS	IRIS Provider Organization ID of organization ***submitting*** the data exchange file. Note in Parent/Vendor setup this is the Parent/Vendor Organization. IRIS Organization ID provided by IRIS.
6	Batch Receiving Facility	O				O	HD	Same definition as the corresponding field in the MSH segment.
6.1	Name (IRIS)	C(R/O)	6	[1..1]		R	IS	Default 'IRIS'
7	Batch Creation Date	O	26			R	TS_Z	
7.1	Date Of Batch	R	20	[1..1]		R	DTM	Same definition as the corresponding field in the MSH segment.
9	File Name/ID	O	20	[0..1]		O	ST	Same definition as the corresponding field in the MSH segment.
10	Batch Comment	O	80	[0..1]		O	ST	
11	Batch Control ID	O	20	[1..1]		R	ST	

SEQ	Element Name	CDC IG Usage	IRIS HL7 Version 2.5.1					COMMENTS/CONSTRAINT
12	Reference Batch Control ID	O	20	[0..1]		O	ST	

BHS Field Definitions

BHS-1 Batch Field Separator (ST) 00081

Definition: This field contains the separator between the segment ID and the first real field, BHS-2-batch 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 required value is |,(ASCII 124). Note that this field is different from other fields and immediately follows the Segment name code.

BHS|

⇑

Separator

BHS-2 Batch Encoding Characters (ST) 00082

Definition: This field contains the four characters in the following order: the component separator, repetition separator, escape characters, and subcomponent separator. The required values are ^~\& (ASCII 94, 126, 92, and 38, respectively).

BHS-3 Batch Sending Application (HD) 00083

Definition: (Same definition as the corresponding field in the MSH segment.)
First component (3.1) Sending Application Name. This field uniquely identifies the sending application. When sending, IRIS will use "IRIS" followed by the current version number of the registry. This field is an optional convenience. See BHS-4 and BHS-6 for the fields principally used to identify sender and receiver of the message.

BHS-4 Batch Sending Facility (HD) 00084

Definition: (Same definition as the corresponding field in the MSH segment). First component (4.1) identifies who is sending the message. When sending, IRIS will use "IRIS".

When the message is being sent to IRIS and the Provider Organization owning the information is different than the organization transmitting the message (as in a Parent/Child or Vendor/Client relationship), you must use the IRIS Provider ID of the Provider Organization that is **submitting** the information (i.e. Parent or Vendor).. Contact the IRIS Help Desk for the appropriate organization ID.

BHS-6 Batch Receiving Facility (HD) 00086

Definition: (Same definition as the corresponding field in the MSH segment.)
First component (6.1) Receiving Facility Name Default is IRIS.

BHS-7 Batch Creation Date/Time (TS) 00087

Definition: (Same definition as the corresponding field in the MSH segment.)
First component (7.1) Date of Batch. This field contains the date/time that the sending system created the message. The degree of precision must be at least to the day, IRIS will ignore the time component.

BHS-9 File Name/ID (ST) 00075

Definition: Name of the file as transmitted from the initiating system.

BHS-10 Batch Comment/Type (ST) 00090

Definition: Free text, which may be included for convenience, but has no effect on processing.

BHS-11 Batch Control ID/Type (ST) 00091

Definition: This field is used to uniquely identify a particular batch. It can be echoed back in BHS-12-reference batch control ID if an answering batch is needed. For IRIS purposes, the answering batch will contain ACK messages.

BHS-12 Reference Batch Control ID /Type (ST) 00092

Definition: This field contains the value of BHS-11-batch control ID when this batch was originally transmitted. Not present if this batch is being sent for the first time. See definition for BHS-11-batch control ID.

BHS segment Example

```
BHS|^~\&|MYEHR|36||IRIS|20120302|||00010223
```

MSH—Message Header Segment

Table 5-3 Message Header Segment (MSH)

SEQ	Element Name	CDC IG Usage	IRIS HL7 VERSION 2.5.1					COMMENTS/CONSTRAINT
			IRIS Len	Cardinality	Value Set (Table)	IRIS Usage	IRIS Data Type	
1	Field Separator	R	1	[1..1]		R	ST	The MSH.1 field shall be |
2	Encoding Characters	R	4	[1..1]		R	ST	The MSH.2 field shall be ^~\&
3	Sending Application	RE		[0..1]	0361	RE	HD	No constraint
3.1	Name Space ID	CE	95	[0..1]		CE	IS	
4	Sending Facility	RE		[1..1]		R	HD	
4.1	IRIS Organization ID	C/R(O)	6	[1..1]	0062	R	IS	IRIS Provider Organization ID of organization ***submitting*** the data exchange file. Note in Parent/Vendor setup this is the Parent/Vendor Organization. IRIS Organization ID provided by IRIS.
5	Receiving Application	RE		[0..1]	0361		HD	
5.1	Name	CE	6	[1…1]		RE	IS	If sent, please use 'IRIS'.
6	Receiving Facility	RE		[0..1]	0362		HD	Date format: YYYY[MM[DD[HH[MM[SS[.S[S[S[S]]]]]]]]][+/-ZZZZ].
6.1	Name	CE	6	[1..1]		RE	IS	If sent, please use 'IRIS'.
7	Date/Time of Message	R		[1..1]			TS_Z	Date format: YYYY[MM[DD[HH[MM[SS[.S[S[S[S]]]]]]]]][+/-ZZZZ].

SEQ	Element Name	CDC IG Usage	IRIS HL7 VERSION 2.5.1					COMMENTS/CONSTRAINT
			IRIS Len	Cardinality	Value Set (Table)	IRIS Usage	IRIS Data Type	
7.1	Date	R	26			R	DTM	The degree of precision must be at least to the day. IRIS will ignore the time component
9	Message Type	R		[1..1]			MSG	Shall be 'VXU^V04^VXU_V04'
9.1	Message	R	3	[1..1]		R	ID	
9.2	Trigger Event	R	3	[1..1]		R	ID	
9.3	Message Structure	R	7		0354	R	ID	
10	Message Control ID	R	20	[1..1]		R	ST	
11	Processing ID	R		[1..1]	0103		PT	
11.1	ID	R	1	[1..1]		R	ID	The processing ID for IRIS is "P" for production processing.
12	Version ID	R		[1..1]			VID	
12.1	Version ID	R	6	[1..1]	0104	R	ID	Shall be 2.5.1
15	Accept acknowledgment type	R	2	[1..1]	0155	RE	ID	Shall be 'ER'
16	Application Acknowledgment Type	R	2	[0..1]	0155	RE	ID	IRIS will assume AL if empty. Send as 'AL' or empty to receive error messages.
21	Message Profile Identifier	R		[1..*]		R	EI	Shall be 'Z22^CDCPHINVS'
21.1	Entity Identifier	R				R	ST	
21.2	Namespace ID	C(R/O)	20		0363	C	IS	

SEQ	Element Name	CDC IG Usage	IRIS HL7 VERSION 2.5.1					COMMENTS/CONSTRAINT
			IRIS Len	Cardinality	Value Set (Table)	IRIS Usage	IRIS Data Type	
22	Sending Responsible Organization	RE		[0..1]		R	XON	The initiator of this message. **Definition**: Business organization that originated and is accountable for the content of the message...The Business Organization represents the legal entity responsible for the contents of the message. Please use IRIS ID as provided by IRIS. **IMPORTANT:** This value will be used to determine patient relationship with organization for chart number in PID-3 and Patient Status in PD1-16. A relationship is needed include patient in organization's Reminder letters, AFIX reports etc.
22.1	Organization Name	C(R/O)				R	ST	Please use IRIS Provider Organization ID as provided by IRIS. This is the owner of the record. In a Parent/Vendor setup, this would be the Child Organization.
22.6	Assigning Authority	C(R/O)			0363	C(R/O)	HD	If MSH-22.10 (Organization Identifier) is valued, Shall be "IDA".
22.7	Identifier Type Code	C(R/X)			0203	C(R/X)	ID	If MSH-22.10 (Organization Identifier) is valued. Shall be "LR".

SEQ	Element Name	CDC IG Usage	IRIS HL7 VERSION 2.5.1					COMMENTS/CONSTRAINT
			IRIS Len	Cardinality	Value Set (Table)	IRIS Usage	IRIS Data Type	
22.10	Organization Identifier	C(R/RE)				C(R/RE)	ST	If MSH-22.1 (Organization Name) is **not** valued, Please use IRIS ID as provided by IRIS.
23	Receiving Responsible Organization	RE		[0..1]		RE	XON	The final recipient of this message. Shall be "IRIS"

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. Required value is |, (ASCII 124).
IRIS requires the HL7 recommended field separator "|".

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. Required values are ^~\& (ASCII 94, 126, 92, and 38, respectively).
Example of MSH-1 and MSH-2:
MSH|^~\&|

MSH-3 Sending Application (HD) 00003

Definition: First component (3.1) Name of the sending application. This field uniquely identifies the sending application. When sending, IRIS will use "IRIS" followed by the current version number of the registry. This field is an optional convenience. See MSH-4 and MSH-6 for the fields principally used to identify sender and receiver of the message.

MSH-4 Sending Facility (HD) 00004

Definition: This field identifies the organization responsible for the operations of the sending application. Locally defined codes accommodate local needs. The first component shall be the name space id found in User-defined Table 0362. The second and third components are reserved for use of OIDs.

First Component (4.1), identifies the IRIS provider organization ID. Contact the IRIS Help Desk for the appropriate provider's IRIS ORG ID. When sending, IRIS will use "IRIS".

When the message is being sent to IRIS and the Provider Organization owning the information is different than the organization transmitting the message (as in a Parent/Child or Vendor/Client relationship), you must use the IRIS Provider ID of the Provider Organization that **is sending** the information (e.g. |36|). Please refer to Appendix B for an example of how the IRIS IDs should be used throughout the message in the case of Parent/Child relationships.

MSH-5 Receiving Application (HD) 00005

Definition: *First component (5.1)* identifies the receiving application. Records submitted should use 'IRIS' as the receiving application.

MSH-6 Receiving Facility (HD) 00006

Definition: First component (6.1) identifies the organization responsible for the operations of the receiving application. This should be defaulted to 'IRIS'.

When sending, IRIS will use the IRIS Provider Organization ID assigned when the provider first registers with the IRIS database and IRIS-Web interface.

MSH-7 Date/Time Of Message (TS_Z) 00007

Definition: *First component (7.1)* contains the date/time that the sending system created the message. The degree of precision must be at least to the day, IRIS will ignore the time component. The time zone must be specified and will be used throughout the message as the default time zone. Date format is YYYY[MM[DD[HH[MM[SS[.S[S[S[S]]]]]]]]][+/-ZZZZ.

MSH-9 Message Type (MSG) 00009

Definition: This field contains the message type (9.1) , trigger event (9.2), message structure (9.3) , This table contains values such as VXU, QBP etc. The following table lists those anticipated to be used by IIS. Query specifications are discussed in a separate document.

Table 5-4.1 Message Types

Transaction	2.5.1 Message type
Unsolicited update of immunization record	VXU
Query to another system	QBP
Response to query	RSP

Refer to HL7 Table 0003 - Event type for valid values for the trigger event. This table contains values like V04, Q11 etc.

For IRIS purposes, VXU^V04^VXU_V04 for a message conveying patient and immunization information, or QBP^Q11 when asking for a RSP^K11 response from IRIS. In acknowledgement messages the value ACK is sufficient and the second component may be omitted.

Message structure component is required.

MSH-10 Message Control ID (ST) 00010

Definition: This is a required field. Message rejection will result if nothing is received in this field. The message control ID is a string (which may be a number) uniquely identifying the message among all those ever sent by the sending system. It is assigned by the sending system and echoed back in the ACK message sent in response to identify the specific record which contains errors. *It is important to have this be an ID that the provider can use to identify the patient record.*

MSH-11 Processing ID (PT) 00011

Definition: *The first component 11.1 is the processing ID.* 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. The processing ID to be used by IRIS is **P** for production processing. If this field is null, an informational message is generated indicating that IRIS is defaulting to **P**.

MSH-12 Version ID (VID) 00012

Definition: The first component (12.1) 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. For the parser, the version number that is read in the **first** MSH segment, of the file, will be the version assumed for the whole file. Use a value of "2.5.1" to indicate HL7 Version 2.5.1.

*If there is no version number found in the first MSH segment, a hard error will occur and the file will not be processed.

You will need to tell the Idaho Immunization Program (IIP) which version of HL7 you will be sending: HL7 2.4, HL7 2.5.1 (release 1.3) or HL7 2.5.1 Latest (release 1.5) when setting up your organization for data exchange. IRIS will process your file according to the version configured in IRIS, not the format indicated on the incoming file. The HL7 version selected for the sending organization number "tells" IRIS which parsing and business rules to apply when processing an incoming file and when generating an outbound response.

MSH-15 Accept Acknowledgment Type (ID) 00015

Definition: This field controls whether an acknowledgement is generated for the message sent. IRIS will accept a value of ER to ask that acknowledgements be sent only for messages that cannot be processed normally. If the field is empty, IRIS will assume the value of ER.

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. IRIS will accept a value of AL to ask that acknowledgements be sent for messages that cannot be processed normally. If the field is empty, IRIS will assume the value of AL.

MSH-21 Message Profile Identifier (EI) 01598

Definition: Sites may use this field to assert adherence to, or reference, a message profile. Message profiles contain detailed explanations of grammar, syntax, and usage for a particular message or set of messages. The CDC IG Chapter 7 describes the query profile for requesting an immunization history. It also includes child profiles that constrain the response to the query.

MSH-22 Responsible Sending Organization (XON)

Definition: Business organization that originated and is accountable for the content of the message.
Currently, MSH provides fields to transmit both sending/receiving applications and facilities (MSH-3 – MSH-6). However, these levels of organization do not necessarily relate to or imply a legal entity such as a business organization. As such, multiple legal entities (organizations) may share a service bureau, with the same application and facility identifiers. Another level of detail is required to delineate the various organizations using the same service bureau.

Therefore, the Sending Responsible Organization field provides a complete picture from the application level to the overall business level. The Business Organization represents the legal entity responsible for the contents of the message. In an IRIS Parent/child or Vendor/Client facility setup, the Responsible (Administering) Organization is the Child Organization.

IMPORTANT: MSH -22 is used to create a relationship between the patient and the responsible organization. A relationship between patient and organization is needed to include patient in the organization's Reminder letters, AFIX reports etc. The chart number (PID-3) and patient status (PD1-16) sent will be saved for this patient/organization pairing. IRIS requires a valid IRIS provider organization ID in MSH-22.

MSH-23 Responsible Receiving Organization (XON)

Definition: Business organization that is the intended receiver of the message and is accountable for acting on the data conveyed by the transaction.

This field has the same justification as the Sending Responsible Organization except in the role of the Receiving Responsible Organization. The receiving organization has the legal responsibility to act on the information in the message.

MSH segment Examples

MSH|^~\&|MYEHR|36||IRIS|20120302||VXU^V04^VXU_V04|00000123|P|2.5.1|||ER|AL|||||Z22^CDCPHINVS|36^^^^^IDA^LR^^^36|IRIS|

If MSH only 22.1 used:

MSH|^~\&|MYEHR|36||IRIS|20120302||VXU^V04^VXU_V04|00000123|P|2.5.1|||ER|AL|||||Z22^CDCPHINVS|36|IRIS|

PID—Patient Identifier Segment

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.

Table 5-6-Patient Identifier Segment (PID)

SEQ	Element Name	CDC IG Usage	IRIS HL7 VERSION 2.5.1					COMMENTS/CONSTRAINT
			IRIS Len	IRIS Cardinality	IRIS Value Set (Table)	IRIS Usage	IRIS Data Type	
1	Set ID – PID	R	4	[1..1]		R	SI	Shall be '1'
3	Patient Identifier List	R				R	CX	
3.1	ID	R	20	[1..*]		R	ST	
3.4	Assigning Authority	R			0363	R	HD	Shall be 'IDA'
3.5	Identifier Type Code	R	3	[1..*]	0203	R	ID	
5	Patient Name	R		[1..1]		R	XPN	
5.1	Family Name	R	35	[1..1]		R	FN	IRIS will not accept records with this field blank.
5.2	Given Name	R	30	[1..1]		R	ST	IRIS will not accept records with this field blank.
5.3	Middle Initial or Name	RE	30	[1..1]		RE	ST	
5.4	Suffix	O	10	[1..1]		O	ST	
5.7	Name Type Code	R	1	[1..1]	0200	RE	ID	Shall be 'L'
6	Mother's Maiden Name	RE		[1..1]		RE	XPN_M	
6.1	Family/Last Name Prefix	R	35	[1..1]		R	FN	
6.2	Given Name	O	25	[0..1]		O	ST	
6.3	Second and Further	O	30	[0..1]		O	ST	

SEQ	Element Name	CDC IG Usage	IRIS HL7 VERSION 2.5.1					COMMENTS/CONSTRAINT
			IRIS Len	IRIS Cardinality	IRIS Value Set (Table)	IRIS Usage	IRIS Data Type	
	Given Names or Initials Thereof							
6.7	Name Type Code	R	1		0200	R	ID	Shall be 'M'
7	Date/Time of Birth	R		[1..1]		R	TS_NZ	
7.1	Date	R	26			R	DTM	
8	Administrative Sex	R	1	[1..1]	0001	R	IS	M= male, F = female, U = not determined/unspecified/unknown.
10	Race	RE			CDCREC		CE	
10.1	Identifier	R	6	[1..*]		RE	ST	
11	Patient address	RE		[0..1]		RE	XAD	The first repetition should be the primary address. IRIS will only store the first incidence.
11.1	Street Address	RE	55	[0..1]		RE	SAD	
11.2	Other Designation	RE	55	[0..1]		RE	ST	
11.3	City	RE	52	[0..1]		RE	ST	
11.4	State	RE	2	[0..1]		RE	ST	
11.5	Zip	RE	9	[0..1]		RE	ST	
11.6	Country	RE	3	[0..1]		RE	ID	
11.7	Address Type	R	3	[1..3]	0190	R	ID	
11.9	County	O	5	[0..1]	0289	O	IS	For Idaho Counties, use table 0289
13	Phone Number – Home	RE		[0..*]		RE	XTN	
13.1	[(999)] 999-9999 [X99999][C any text]	X	25	[0..1]		-	-	Deprecated

SEQ	Element Name	CDC IG Usage	IRIS HL7 VERSION 2.5.1					COMMENTS/CONSTRAINT
			IRIS Len	IRIS Cardinality	IRIS Value Set (Table)	IRIS Usage	IRIS Data Type	
13.2	Telecommunication Use Code	R	3	[0..1]	0201	R	ID	
13.3	Telecommunication Equipment Type	RE			0202	RE	ID	Send 'PH' for landline phone, 'CP' for cell phone or 'X.400' for email address
13.4	Email Address	C(R/X)				C(R/X)	ST	Required if PID-13.2 is 'NET'
13.6	Area Code	C(RE/X)	3	[0..1]		C(RE/X)	NM	Required if PID-13.2 is not 'NET'
13.7	Phone Number	C(R/X)	7	[0..1]		C(R/X)	NM	Required if PID-13.2 is not 'NET'
13.8	Extension	O	6	[0..1]		O	NM	
13.9	Any Text	O	-	[0..1]		O	ST	
22	Ethnic Group	RE			CDCREC	RE	CE	
22.1	Identifier	R	6	[0..1]	0189	R	ST	
24	Multiple Birth Indicator	RE	1	[0..1]	0136	RE	ID	The acceptable values are Y and N. If the status is undetermined, then field shall be empty.
25	Birth Order	C(RE/O)	2	[0..1]		C(RE/O)	NM	If PID-24 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.
29	Patient Death Date and Time	C(RE/X)		[0..1]		C(R/X)	TS	If PID-30 is 'Y' then death date must be sent. If a death date is sent, then the Patient Registry Status in PD1-16 must indicate a value of 'P' for deceased and

SEQ	Element Name	CDC IG Usage	IRIS HL7 VERSION 2.5.1					COMMENTS/CONSTRAINT
			IRIS Len	IRIS Cardinality	IRIS Value Set (Table)	IRIS Usage	IRIS Data Type	
								PID-30 must indicate a value of 'Y'.
29.1	Date/Time	R	26			R	DTM	
30	Patient Death Indicator	RE		[0..1]	0136	R	ID	Refer to requirements for PID-29 and PD1-16

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: Sub-components 1 (ID), 4 (Assigning Authority) and 5 (identifier type code) are required in the PID-3 field. When a Provider Organization is sending to IRIS, use the responsible organization's (MSH-22) Patient ID or other identifier if available. When IRIS is sending to an outside system it will use the patient's IRIS ID (State Registry) and the responsible provider organization's Patient ID when it is available.

Please note that social security number cannot be sent to nor accepted by IRIS according to public health law.

PID-5 Patient Name (XPN) 00108

Definition: Last name and first name are required in the first two components. The Name Type Code component should be L-Legal. IRIS does not support repetition of this field.

PID-6 Mother's Maiden Name (XPN_M) 00109

Definition: This field contains the family name under which the mother was born (i.e., before marriage). It is used to distinguish between patients with the same last name. IRIS uses only last name (6.1) and first name (6.2) and name type (6.7). The Name Type Code component should be M-Maiden. IRIS does not support repetition of this field.

PID-7 Date/Time of Birth (TS_NZ) 00110

Definition: This field contains the patient's date of birth (YYYYMMDD). IRIS ignores any time component.

PID-8 Administrative Sex (IS) 00111

Definition: This field contains the patient's sex. Refer to User-defined Table 0001 - Administrative Sex for suggested values. Use F, M or U.

PID-10 Race (CE) 00113

Definition: This field refers to the patient's race. Refer to User-defined Table 0005 - Race for suggested values. IRIS stores and writes "Unknown" values as null. IRIS does not support repetition of this field.

PID-11 Patient Address (XAD) 00114le 019

Definition: ***This field contains the mailing address of the patient. Address type codes are defined by HL7 Tab 0 - Address Type. \|Street^PO Box^City^State^Zip^Country^Address Type^^County\|***

For example: |123 EXAMPLE STREET^APT. 1^BOISE^ID^83704^USA^M^^ID001|.

IRIS does not support repetition of this field.

PID-13 Phone Number - Home (XTN) 00116

Definition: This field contains the patient's personal phone numbers and email address. Refer to HL7 Table 0201 - Telecommunication Use Code and HL7 Table 0202 - Telecommunication Equipment Type for valid values.
If PRN is specified in component 13.2 (telecommunication use code (ID) from table 0201) IRIS will use the 6th 7th 8th and 9th components for specification of area code (13.6), phone number (13.7), extension (13.8) , respectively. Otherwise, IRIS will assume that the phone number is specified in the first component in the [NNN] [(999)]999-9999[X99999][B99999][C any text] format. IRIS will save the cell phone number (i.e. PID-13.3 = CP) over a landline phone number (i.e. PID-13.3 = PH) if both are sent.

If NET is specified in component 13.2 (telecommunication use code (ID) from table 0201) and X.400 is specified in component 13.3 (telecommunication equipment type), IRIS will use the 4th component for the email address.

PID-22 Ethnic Group (CE) 00125

Definition: This field further defines the patient's ancestry. Refer to User-defined Table CDCREC - Ethnic Group. IRIS stores and writes "Unknown" values as null. IRIS does not support repetition of this field.

PID-24 Multiple Birth Indicator (ID) 00127

Definition: This field indicates whether the patient was part of a multiple birth. Refer to HL7 Table 0136 - Yes/No Indicator for valid values.
Y - the patient was part of a multiple birth
N - the patient was a single birth
Empty multiple birth status is undetermined.

If Y is entered in this field, you must supply the required information in PID-25.

PID-25 Birth Order (NM) 00128

Definition: When a patient was part of a multiple birth, a value (number) indicating the patient's birth order is entered in this field. If PID-24 is populated, then this field must be populated. Use 1 for the first born, 2 for the second, etc. This field is useful in matching patient data to existing records.

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

Definition: This field contains the date and time at which the patient death occurred. Give the year, month, and day (YYYYMMDD). IRIS ignores any time component. If a death date is sent, then the Patient Registry Status in PD1-16 must indicate a value of "P" for deceased and PID-30 must indicate a value of 'Y".

PID-30 Patient Death Indicator (ID) 00741

Definition: This field indicates whether the patient is deceased. Refer to HL7 Table 0136 - Yes/no Indicator for valid values.
Y: the patient is deceased
N: the patient is not deceased

Empty: status is undetermined

If a death indicator of "Y" is sent, then the Patient Registry Status in PD1-16 must indicate a value of "P" for deceased and PID-29 must indicate a valid date of death.

PID Segment Examples

PID|1||23LR999^^^IDA^PI||MAGUIRE^JERRY^M^JR^^^L^|CARRINGTION^ALEXIS^^^^^M^|20110227|M||2106-3|
123 EXAMPLE STREET^APT. 1^BOISE^ID^83704^USA^M^^ID001||^PRN^CP^^^208^5551234~^NET^X.400^jmcguire@yahoo.com^|
|||||||| 2186-5||Y|2|||||N

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.

Table 5-7-Patient Demographic Segment (PD1)

SEQ	ELEMENT NAME	CDC IG Usage	IRIS HL7 VERSION 2.5.1					COMMENTS/CONSTRAINT
			IRIS Len	Cardinality	Value Set (Table)	IRIS Usage	IRIS Data Type	
11	Publicity Code	RE		[0..1]		RE	CE	
11.1	Publicity Code	R	3	[0..1]	0215	R	ST	
12	Protection indicator	RE	1	[0..1]	0136	RE	ID	Shall be 'N' or blank. IRIS does not allow patients to opt out of IRIS via data exchange. See field definition below.
13	Protection Indicator effective date	C(RE/X)	8	[0..1]		C(RE/X)	DT_D	If PD1-12 protection indicator is populated, then this field should be valued.

SEQ	ELEMENT NAME	CDC IG Usage	IRIS HL7 VERSION 2.5.1					COMMENTS/CONSTRAINT
			IRIS Len	Cardinality	Value Set (Table)	IRIS Usage	IRIS Data Type	
16	Immunization Registry Status	RE	1	[0..1]	0441	C(R/RE)	IS	If a code of P is specified in PID-29, then field must contain Patient Death Date or record will be rejected. Status defaults to Active if left blank.
17	Immunization Registry Status Effective Date	C(RE/X)	8	[0..1]		C(RE/X)	DT_D	If PD1-16 registry status field is filled, then this field should be valued.
18	Publicity Code Effective Date	C(RE/X)	8	[0..1]		C(RE/X)	DT_D	If PD1-11 publicity code field is filled, then this field should be valued.

PD1 Field Definitions

PD1-11 Publicity Code (CE) 00743

Definition: Controls whether recall/reminder notices are sent. IRIS will recognize "01" to indicate no recall/reminder notices or "02" recall/reminder notices any method. Refer to User-defined Table 0215 - Publicity Code for suggested values.

PD1-12 Protection Indicator (ID) 00744

Definition: **For HL7 version 2.5.1:**

There are 3 states for the Protection Indicator (codes are for HL7 2.5.1):

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

sharing	process as N

The protection state must be actively determined by the clinician. If it is not actively determined, then the protection indicator shall be empty. Patients must have protection indicator of N 'No Protection' to be entered or updated in IRIS. If the patient requested to opt out of IRIS, please contact the Idaho Immunization Program at iip@dhw.idaho.gov or 208-334-5931 to obtain the OptOut form.

PD1-13 Protection Indicator Effective Date (DT_D) 01566

Definition: This field indicates the effective date for PD1-12 - Protection Indicator. Format is YYYYMMDD. IRIS will ignore the time component.

PD1-16 Immunization Registry Status (IS) 01569

Definition: This field identifies the current status of the patient in relation to the sending provider organization.. Refer to Table 0441 - Immunization Registry Status for suggested values. If a code of P is specified the PID-29 segment must be filled in with Patient Death Date and PID-30 must have Death Indicator of 'Y' or record will be rejected.

This field captures whether the sending provider organization considers this an active patient. There are several classes of responsibility. The status may be different between the sending and receiving systems. For instance, a person may no longer be active with a provider organization, but may still be active in the public health jurisdiction, which has the Immunization Information System (IIS). In this case the provider organization would indicate that the person was inactive in their system using this field in a message from them. The IIS would indicate that person was active in a message from the IIS.

PD1-17 Immunization Registry Status Effective Date (D_DT) 01570

Definition: This field indicates the effective date for the registry status reported in PD1-16 - Immunization Registry Status. Format is YYYYMMDD. IRIS will ignore the time component.

PD1-18 Publicity Code Effective Date (DT_D) 01571

Definition: This is the effective date for PD1-11 – Publicity Code. Format is YYYYMMDD. IRIS will ignore the time component.

PD1 Segment Example

Example including protection indicator – version 2.5.1

PD1|||||||||||02|N|20161102|||A|20170101|20170101

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.

Table 5-8-Next of Kin Segment (NK1)

SEQ	Element Name	CDC IG Usage	IRIS HL7 Version 2.5.1					COMMENTS/CONSTRAINT
			IRIS Len	Cardinality	Value Set (Table)	IRIS Usage	IRIS Data Type	
1	Set ID – NK1	R	4	[1..1]		R	SI	SHALL be valued sequentially starting with the value "1".
2	Name						XPN	The first instance is the legal name and is required.
2.1	Family Last Name	R	35	[1..1]		R	FN	
2.2	Given Name	R	30	[1..1]		R	ST	
2.3	Middle Initial or Name	RE	30	[1..1]		RE	ST	
2.4	Suffix	O	10	[1..1]		O	ST	
2.7	Name Type Code	R	1		0200	R	ID	Shall be 'L'
3	Relationship	R			0063	R	CE	
3.1	Identifier	R	3	[0..1]	0063	R	ST	
3.2	Text	RE	25	[0..1]		RE	ST	
3.3	Name of Coding System	R	7	[0..1]		R	ID	
4	Address	RE		[0..1]		RE	XAD	The first instance shall be the primary address. IRIS will only store the first instance.

SEQ	Element Name	CDC IG Usage	IRIS HL7 Version 2.5.1					COMMENTS/CONSTRAINT
			IRIS Len	Cardinality	Value Set (Table)	IRIS Usage	IRIS Data Type	
4.1	Street Address	RE	55	[0..1]		RE	SAD	
4.2	Other Designation	RE	55	[0..1]		RE	ST	
4.3	City	RE	52	[0..1]		RE	ST	
4.4	State	RE	2	[0..1]		RE	ST	
4.5	Zip	RE	9	[0..1]		RE	ST	
4.6	Country	RE	3	[0..1]	0399	RE	ID	
4.7	Address Type	R	3		0190	R	ID	
4.9	County	O	5	[0..1]		O	IS	
5	Phone number	RE		[0..*]		RE	XTN	The first instance shall be the primary phone number.
5.1	[(999)] 999-9999 [X99999][C any text]	X	25	[0..1]		X	ST	Deprecated
5.2	Telecommunication Use Code	R	3		0201	R	ID	
5.3	Telecommunication Equipment Type	RE				RE	ID	Send ‘PH’ for landline phone, ‘CP’ for cell phone or ‘X.400’ for email address
5.4	Email Address	C(R/X)				C(R/X)	ST	Required if NK1-5.2 is ‘NET’
5.6	Area Code	CE	5			C(RE/X)	NM	Required if NK1-5.2 is not ‘NET’
5.7	Phone number	CE	8			C(R/X)	NM	Required if NK1-5.2 is not ‘NET’

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. Although this field is required by HL7, IRIS will ignore its value, and there is no requirement that the record for the same responsible person keep the same sequence number across multiple messages, in the case that information from the same record is transmitted more than once.

NK1-2 Name (XPN) 00191

Definition: This field contains the name of the next of kin or associated party. IRIS does not support repetition of this field.
Refer to HL7 Table 0200 - Name Type for valid values.

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. Use the first three components of the CE data type, for example |MTH^Mother^HL70063|.

NK1-4 Address (XAD) 00193

Definition: This field contains the mailing address of the next of kin/associated party. IRIS does not support repetition of this field

NK1-5 Phone Number (XTN) 00194

Definition: This field contains the telephone number of the next of kin/associated party. IRIS will allow one repetition of the telephone number and one repetition of email. If PRN is specified in component 2 (telecommunication use code (ID) from table 0201) IRIS will use the 6th 7th 8th and 9th components for specification of area code, phone number, extension and text, respectively. Otherwise, IRIS will assume that the phone number is specified in the first component in the [NNN] [(999)]999-9999[X99999][B99999][C any text] format.
Refer to HL7 Table 0201 - Telecommunication Use Code and HL7 Table 0202 - Telecommunication Equipment Type for valid values. IRIS will save the cell phone number (i.e. NK1-5.3 = CP) over a landline phone number (i.e. NK1-5.3 = PH) if both are sent.
If NET is specified in component 5.2 (telecommunication use code (ID) from table 0201) and X.400 is specified in component 5.3 (telecommunication equipment type), IRIS will use the 4th component for the email address.

NK1 Segment Example

NK1|1|CARRINGTION^ALEXIS^^^^^L^|MTH^Mother^HL70063|123 EXAMPLE STREET^APT. 1^BOISE^ID^83704^USA^M^^ID001|^PRN^CP^^^208^5554567~^NET^X.400^acarr@yahoo.com^|

IN1—Insurance Segment

Per CDC IG: Local implementations may document use for local purposes in local implementation Guide. Field level specifications follow. They have been constrained, based on current usage. Local implementations that require IN1 should base requirements on this guide. Specifications for IN1 are included because several IIS require this segment and this specification is intended to assure that implementations are consistent across systems. For more detailed information on this segment, please refer to the HL7 2.5.1 release 1.5 Implementation Guide posted on the CDC website.

In IRIS, insurance information is **REQUIRED** for patients that are less than 19 years old on the date the vaccine was administered and are ineligible for VFC coverage. The IN1 segment is accepted on inbound submissions to IRIS. IRIS will not send IN1 segments on outbound files.

Note that only the current insurance data should be sent. Historical insurance information should not be sent.

Table 5-9-Insurance Segment (IN1)

SEQ	Element Name	CDC IG Usage	IRIS HL7 Version 2.5.1					COMMENTS/CONSTRAINT
			IRIS Len	Cardinality	Value Set (Table)	IRIS Usage	IRIS Data Type	
1	Set ID – NK1	R	4	[1..1]		R	SI	SHALL be valued sequentially starting with the value “1”.
2	Insurance Plan ID	R	250	[1..1]		R	CE	
3	Insurance Company ID	R	250	[1..1]		R	CX	
3.1	ID	R	15	[1..1]	ID002	R	ST	Refer to table ID002 for accepted NAIC values. Use code for Other if insurer is

SEQ	Element Name	CDC IG Usage	IRIS HL7 Version 2.5.1					COMMENTS/CONSTRAINT
			IRIS Len	Cardinality	Value Set (Table)	IRIS Usage	IRIS Data Type	
								not listed.
3.4	Assigning Authority	R	20	[0..1]	0363	RE	HD	If sent, use NAIC
3.5	Identifier Type Code	R	2..5	[0..1]	0203	RE	ID	If sent, use NIIP or NII
15	Plan Type	R	3	[1..1]	0086	R	IS	
29	Verification Date/Time	RE	26	[0..1]		RE	TS_NZ	
36	Policy Number	O	15			O	ST	

IN1 Field Definitions

IN1-1 Set ID - IN1 (SI) 00426

Definition: IN1-1 - set ID contains the number that identifies this transaction. For the first occurrence the sequence number shall be 1, for the second occurrence it shall be 2, etc.

IN1-2 Insurance Plan ID (CE) 00368

Definition: This field contains a unique identifier for the insurance plan. IRIS will accept free text alpha numeric values. To eliminate a plan, the plan could be sent with null values in each subsequent element. If the respective systems can support it, a null value can be sent in the plan field.

IN1-3 Insurance Company ID (CX) 00428

Definition: This field contains unique identifiers for the insurance company. The assigning authority and identifier type code are strongly recommended for all CX data types.

First component 3.1 indicates the patient's Insurance Provider. Indicate the insurance provider by sending the insurers National Association of Insurance Commissioners (NAIC) Identifier code. IRIS provides a list of common insurers in Idaho in local table ID002. If an insurance provider you want to submit is not on the table, please use the NAIC code for 'Other'.

IN1-15 Plan Type (IS) 00440

Definition: This field contains the coding structure that identifies the various plan types, for example, Medicare, Medicaid, Private etc. Refer to User-defined Table 0086 - Plan ID for suggested values.

IN1-29 Verification Date/Time (TS) 00454

Definition: This field contains the date/time that the healthcare provider verified that the patient has the indicated benefits.

IN1-36 Policy Number (ST)

Definition: This field contains the policy number for the patient. IRIS will accept alpha numeric values up to 15 characters.

IN1 Segment Example

```
IN1|1|ABC123|60095^^^NAIC^NIIP||||||||||||5|||||||||||||20151001|||||||EFG88|
```

ORC—Order Request Segment

This segment is used to record who entered information, who ordered the shot and what facility ordered the shot. In version 2.4 this is recorded in RXA-10 NOTE: The 'ordering' mentioned here is not related to ordering for inventory but ordering for person specific administration. Each RXA segment **must** be associated with one ORC, based on HL7 2.5.1 standard.

Table 5-10 Common Order Segment (ORC)

SEQ	Element Name	CDC IG Usage	IRIS HL7 Version 2.5.1					COMMENTS/CONSTRAINT
			IRIS Len	Cardinality	Value Set (Table)	IRIS Usage	IRIS Data Type	
1	Order Control	R	2	[1..1]	0119	R	ID	
2	Placer Order Number	RE		[0..1]		RE	EI	
3	Filler Order Number	R		[1..1]			EI	See Guidance Below
3.1	Entity Identifier	R	199	[0..1]		R	ST	
3.2	Name Space ID	C(R/O)	20	[0..1]	0363	C(R/O)	IS	Required if ORC-3.3 (Universal ID) is not valued
3.3	Universal ID	C(R/O)	199	[0..1]		C(R/O)	ST	Required if ORC-3.2 (Namespace ID) is not valued
3.4	Universal ID Type	C(R/X)	6	[0..1]	0301	C(R/X)	ID	Required if ORC-3.3 (Universal ID) is valued
10	Entered By	RE	2945	[0..1]		RE	XCN	This is the person that entered this immunization record into the system.
10.1	ID	C(R/RE)	15			C(R/RE)	ST	
10.2	Family Name	RE	194	[0..1]		RE	FN	
10.3	Given Name	RE	30	[0..1]		RE	ST	
10.5	Suffix	O	20	[0..1]		O	ST	
10.6	Prefix	O	20	[0..1]		O	ST	

SEQ	Element Name	CDC IG Usage	IRIS HL7 Version 2.5.1					COMMENTS/CONSTRAINT
			IRIS Len	Cardinality	Value Set (Table)	IRIS Usage	IRIS Data Type	
10.9	Assigning Authority	C(R/X)			0363	C(R/X)	HD	If ORC-10.1 is valued
10.10	Name Type Code	RE			0200	RE	ID	If sent, use 'L'
10.13	Identifier Type Code	C(R/X)			0203	C(R/X)	ID	If ORC-10.1 is valued, send 'PRN'
10.21	Professional Suffix	O			0360	O	ST	
12	Ordering Provider	C(RE/O)		[0..1]		C(RE/O)	XCN	This shall be the provider ordering the immunization. It is expected to be empty if the immunization record is transcribed from a historical record
12.1	ID Number	C(R/RE)	15			C(R/RE)	ST	Required owned immunization and ORC-12.2 and ORC-12.3 are not valued
12.2	Family Name	RE	194	[0..1]		RE	FN	
12.3	Given Name	RE	30	[0..1]		RE	ST	
12.4	Second and Further Given Names or Initials Thereof	RE	30	[0..1]		RE	ST	
12.5	Suffix (e.g., JR or III)	O	20	[0..1]		O	ST	
12.6	Prefix (e.g., DR)	O	20	[0..1]		O	ST	
12.9	Assigning Authority	C(R/X)			0363	C(R/X)	HD	If ORC-12.1 is valued
12.10	Name Type Code	RE			0200	RE	ID	If sent, use 'L'
12.13	Identifier Type Code	C(R/X)			0203	C(R/X)	ID	If ORC-12.1 is valued, send 'PRN'
12.21	Professional Suffix	O			0360	O	ST	
17	Entering Organization	RE			0362	R	CE	This is the provider who entered/owned the record and is required by IRIS

SEQ	Element Name	CDC IG Usage	IRIS HL7 Version 2.5.1					COMMENTS/CONSTRAINT
			IRIS Len	Cardinality	Value Set (Table)	IRIS Usage	IRIS Data Type	
17.1	Identifier	R				R	ST	Provided by IRIS
17.2	Text	RE				RE	ST	
17.3	Name of Coding System	R			0396	R	ID	Shall be 'L'

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. 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.

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.

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 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.
If the RXA is conveying information about an immunization that was not given (e.g. refusal) the filler order number shall be 9999.

ORC-10 Entered By (XCN) 00224

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

ORC-12 Ordering Provider (XCN) 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-17 Entering Organization (CE) 00231

Definition: This field identifies the organization that the enterer belonged to at the time he/she enters/maintains the order, such as medical group or department. The person who entered the request is defined in ORC-10 (entered by). This is also the new Owning organization for the immunization or refusal in the following RXA (previously MSH-4) and required in IRIS and to deduct from inventory.

ORC Segment Example (for HL7 version 2.5.1)

ORC|RE||12345^MYEHR||||||^Imanurse^Jim^^^^^^^L||111222333^imadoctor^taylor^J^^^^^36^L^^^PRN^^^^^^^^^RN||||||1234^Clinic Name^L|

RXA-- Pharmacy/Treatment Administration Segment

The RXA segment carries pharmacy administration data. It is a child of an ORC segment, which a repeating segment in the RSP and VXU messages. Because ORC are allowed to repeat an unlimited numbers of vaccinations may be included in a message. Each RXA must be preceded by an ORC in HL7 version 2.5.1.[2]

Table 5-11 Pharmacy/Treatment Administration (RXA)

SEQ	Element Name	CDC IG Usage	IRIS HL7 VERSION 2.5.1					COMMENTS/CONSTRAINT
			IRIS Len	Cardinality	Value Set (Table)	IRIS Usage	IRIS Data Type	
1	Give sub-ID counter	R	1	[1..1]		R	NM	Required by HL7. Constrain to 0 (zero) for IRIS
2	Administration sub-ID counter	R	1	[1..1]		R	NM	Required by HL7 Constrain to 1 for HL7 2.5.1
3	Date/time start of administration	R		[1..1]		R	TS_NZ	
3.1	Date	R	26	[1..1]		R	DTM	
4	Date/time end of administration	O		[0..1]		O	TS	If populated, this should be the same as Start time (RXA-3)
4.1	Date	O	26	[1..1]		O	DTM	
5	Administered code				0292/CVX	R	CE	CVX code is strongly preferred in first triplet
5.1	Code	R	3	[1..1]		R	ST	
5.2	Code Text	RE	40			RE	ST	
5.3	Name of Coding System	R	3		0396	R	ID	
5.4	Alternate Identifier	O	24	[1..1]		O	ST	

[2] The HL7 Version 2.5.1 document clearly indicates that any RXA must be associated with an ORC. In the case of immunization, each immunization will have its own ORC.

SEQ	Element Name	CDC IG Usage	IRIS HL7 VERSION 2.5.1					COMMENTS/CONSTRAINT
			IRIS Len	Cardinality	Value Set (Table)	IRIS Usage	IRIS Data Type	
5.5	Alternate Code Text	C(RE/X)	40	[1..1]		C(RE/X)	ST	If RXA 5.4 is populated
5.6	Name of Alternate Coding System	C(R/X)	4		0396	C(R/X)	ID	If RXA 5.4 is populated
6	Administered amount	R	20	[1..1]		R	NM	If administered amount is not recorded, use 999. – IRIS will default to "full dose"
7	Administered Units	C(R/X)	60	[0..1]	UCUM	C(R/X)	CE	If previous field is populated by any value except 999, it is required. Send "mL"
9	Administration Notes	C(R/O)		[0..1]	NIP001	C(R/O)	CE	If RXA-20 is valued "CP" or "PA". 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. IRIS will only store the first instance.
9.1	Immunization Information Source	R	2		NIP001	R	ST	
9.2	Text	RE	200	[1..1]		RE	ST	
9.3	Name of Coding System	R	20		0396	R	ID	
10	Administering Provider	C(RE/O)		[0..1]		C(RE/O)	XCN	If the first occurrence of RXA-9.1 is valued "00" and RXA-20 is valued "CP" or "PA" The person who administered the immunization.
10.1	ID	C(R/RE)	15			C(R/RE)	ST	
10.2	Family Name	RE	-	[0..1]		RE	FN	
10.3	Given Name	RE	30	[0..1]		RE	ST	

SEQ	Element Name	CDC IG Usage	IRIS HL7 VERSION 2.5.1					COMMENTS/CONSTRAINT
			IRIS Len	Cardinality	Value Set (Table)	IRIS Usage	IRIS Data Type	
10.4	Middle Initial or Name	RE	30	[0..1]		RE	ST	
10.5	Suffix	O	10			O	ST	
10.6	Prefix	O	3			O	ST	
10.7	Degree	X	3			X	IS	Use professional suffix in sequence 21
10.9	Assigning Authority	C(R/X)			0363	C(R/X)	HD	If the RXA-10.1 (id number) is valued
10.10	Name Type Code	RE			0200	RE	ID	
10.13	Administering Identifier type code	C(R/X)			0203	C(R/X)	ID	If the RXA-10.1 (id number) is valued
10.21	Professional Suffix	O			0360	O	ST	
11	Administered-at Location	C(RE/O))		[0..1]		C(RE/O)	LA2	If the first occurrence of RXA-9.1 is valued "00" and RXA-20 is valued "CP" or "PA" This is the clinic/site where the vaccine was administered.
11.4	Facility (HD)	R	259	[0..1]	0362	R	HD	Required if decrementing from inventory
15	Substance Lot Number	C(R/O)	20	[0..1]		C(R/O)	ST	Not needed for Historical (not owned) immunizations
16	Substance Expiration Date	C(RE/O)	-	[0..1]		C(RE/O)	TS_M	If the first occurrence of RXA-9.1 is valued "00" and RXA-20 is valued "CP" or "PA"
16.1	Time	R	-	[1..1]		R	DTM	
17	Substance Manufacturer Name	C(R/O)		[0..1]	0227 / MVX	C(R/O)	CE	Required for all administered immunizations. Not needed for Historical (not owned) immunizations
17.1	Identifier	R	4	[0..1]	0227	R	ST	

SEQ	Element Name	CDC IG Usage	IRIS HL7 VERSION 2.5.1					COMMENTS/CONSTRAINT
			IRIS Len	Cardinality	Value Set (Table)	IRIS Usage	IRIS Data Type	
17.2	Text	RE	95			RE	ST	
17.3	Name of Coding System	R	3		0396	R	ID	
18	Substance Refusal Reason	C(R/X)		[0..*]	NIP002	C(R/X)	CE	If the Completion status is RE, then this shall be populated
18.1	Identifier	R	3			R	ST	
18.2	Text	RE	180			RE	ST	
18.3	Name of Coding System	R	6		0396	R	ID	
20	Completion Status	RE	-	[0..1]	0322	RE	ID	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	Action Code – RXA	C(R/O)	-	[0..1]	0323	C(R/O)	ID	If RXA-5.1 is not valued “998”

RXA Field Definitions

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

Definition: Required by HL7. Use “0” for IRIS

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

Definition: This field is used to track multiple RXA under an ORC. For HL7 2.5.1, as each ORC has only one RXA in immunization messages, constrain to 1. Other numeric values will be ignored.

RXA-3 Date/Time Start of Administration (TS_NZ) 00345

Definition: The date this vaccination occurred. In the case of refusal or deferral, this is the date that the refusal or deferral was recorded. IRIS ignores any time component.

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

Definition: In the context of immunization, this is equivalent to the Start date/time. If populated it should be the same date as RXA-3. If empty, the date/time of *RXA-3-Date/Time Start of Administration* is assumed.

RXA-5 Administered Code (CE) 00347

Definition: This field identifies the medical substance administered. CVX codes are required, the preference is that CVX is placed in the first triplet. The second set of three components may be used to represent the **same** vaccine using a different coding system. IRIS accepts the CVX code, CPT code, Vaccine Trade Name, or Vaccine Group Code for the vaccine administered. CVX codes are preferred. If using the CVX code, give the CVX code in the first component and "CVX" in the third component. If using the CPT code, the vaccine group code or vaccine trade name, use components four through six. For example, give the CPT code in the fourth component and "C4" in the sixth component, |^^^90700^DtaP^C4|. If using vaccine group code, use "99VGC" as the name of the coding system. If using vaccine trade name, use "99VTN" as the name of the coding system. See the CE data type and HL7 - Table 0292 (CVX Codes), IRIS – Table C4 (CPT Codes), IRIS – Table 99VGC (Vaccine Group Codes), and IRIS – Table 99VTN (Vaccine Trade Names).

Note: IRIS does not accept NDC codes at this time.

RXA-6 Administered Amount (NM) 00348

Definition: Dose Magnitude is the number of age appropriate doses administered. For example, a dose of 2 of a pediatric formulation would be adequate for an adult. IRIS and HL7 require this field to contain a value. However, a value of 1.0 will be stored in its place.

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. Use "mL" for IRIS.

RXA-9 Administration Notes (CE) 00351

Definition: This field is used to indicate whether this immunization record is based on a historical record or was given by the reporting provider. It should contain the information source (see *NIP-defined Table 001 - Immunization Information Source)*. The first component shall contain the code, the second the free text and the third shall contain the name of the code system. (NIP001) Sending systems should be able to send this information. Receiving systems should be able to accept this information.

IRIS will recognize 00 to indicate new immunization administered/owned by the sending organization or 01 to indicate historical (not owned) record – source unspecified. If the source for a historical record is known, please use values 02 through 08 in Table NIP001. For outgoing IRIS-Provider processing, Data Exchange will write out the corresponding immunization id in the second repeating segment.

NOTE: If this field is left blank, the immunization will be recorded as historic (i.e. not administered by the organization that owns the HL7 message) in IRIS. ALL immunizations that were administered in your provider office should be recorded as "00" to ensure that the record is correctly associated with your organization in IRIS.

NOTE: Conditional Required: To deduct immunization from inventory, RXA-9 value must be 00 'New administered'. If an organization wishes to have IRIS inventory automatically decremented upon data exchange upload, RXA-9.1 must be populated with '00' for all owned immunizations. If any other value is used or the field is blank, inventory will not be decremented.

**To have the inventory decrementing capability implemented for your organization(s) please contact IRIS staff.

RXA-10 Administering Provider (XCN) 00352

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

For HL7 version 2.5: The ordering and entering providers are indicated in the associated ORC segment.

RXA-11 Administered-at Location (LA2) 00353

Definition: The name and address of the facility that administered the immunization. Note that the components used are:
Component 4: The facility name/identifier.
Components not specifically mentioned here are not expected in immunization messages.

*** Conditional Required: To deduct immunization from inventory, RXA-11.4 is required.** RXA- 11.4 must be populated with the same IRIS ORG ID used in ORC-17. If this field is left blank or does not match then decrementing will not occur.

RXA-15 Substance Lot Number (ST) 01129

Definition: This field contains the lot number of the medical substance administered. It may remain empty only if the dose is from a historical record. IRIS does not support repetition of this field.

*** Conditional Required: To deduct immunization from inventory, RXA-15 is required.** If an organization wishes to have IRIS inventory automatically decremented upon data exchange upload, the lot number is required to be sent and must match exactly the lot number stored in the IRIS inventory. Lot Number is required all administered immunizations. However, it is not needed for Historical (not owned) immunizations.

Note: The lot number is the number printed on the label attached to the container holding the substance and on the packaging, which houses the container.

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: This field contains the manufacturer of the medical substance administered. For example, |AB^Abbott^MVX^^^|. IRIS recommends use of the external code set MVX. "When using this code system to identify vaccines, the coding system component of the CE field should be valued as "MVX" not as "HL70227." IRIS does not support repetition of this field.

Note: Manufacturer Name is required for all administered immunizations. However it is not needed for Historical (not owned) immunizations.

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.

The vaccine that was offered should be recorded in RXA-5, with the number 0 recorded for the dose number in RXA-2. Do not record contraindications, immunities or reactions in this field. IRIS does not support repetition of this field.

Notes on Refusals:

a) IRIS only stores the fact that a refusal of a vaccine occurred, not a specific type of refusal. Please see the example below.
b) IRIS will not store refusals which do not have an 'applies to' date. It will write out multiple refusals for the same vaccine on different dates for those patients who have them.

c) The IRIS system will accept incoming refusals of the same vaccine on different dates and file them both. However, if they both have the same applies-to date, only one will be stored.
d) The sending organization will become the refusal owner. In general, only the organization who owns the refusal is permitted to edit it. However, in the case of parent and child organizations, the parent may edit the child's refusals and vice versa.

Here is a sample RXA segment for an MMR refusal given on the date 01/01/2007:
RXA|0|1|20070101||03^MMR^CVX|1.0|||||||||||00^PARENTAL REFUSAL^NIP002^^^||RE|A|||

RXA-20 Completion Status (ID) 01223

Definition: This field indicates if the dose was successfully given. 'CP' is used if the dose was successfully given. It must be populated with 'RE' refusal if RXA-18 refusal reason is populated. A 'PA' partially administered dose refers to the scenarios where the patient jumps and the needle breaks, resulting in an unknown quantity of vaccine entering the patient's system or if the dose was not potent.

RXA-21 Action Code – RXA (ID) 01224

Definition: This field indicates the action expected by the sending system. This field has a usage of RE. If it is left empty, then receiving systems should assume that the action code is A.

At this time IRIS will not accept immunization record deletions through electronic data exchange.

RXA Segment Example

HL7 version 2.5.1

RXA|0|1|20050423||03^MMR^CVX^^^|0.5|mL||00^New Immunization Administered^NIP002
|123456789^SMITH^JOHN^J^JR^MR^^^36^L^^^PRN^^^^^^^^MD|^^^36||||CC69852|20061212|MSD^Merck^MVX|||CP|A

RXR-- Pharmacy/Treatment Route Segment

The Pharmacy/Treatment Route segment contains the alternative combination of route, site, administration device, and administration method that are prescribed as they apply to a particular order.

Table 5-12 Pharmacy/Treatment Route (RXR)

SEQ	Element Name	CDC IG Usage	IRIS HL7 Version 2.5.1			IRIS HL7 VERSION 2.5.1		COMMENTS/CONSTRAINT
			IRIS Len	Cardinality	Value Set (Table)	IRIS Usage	IRIS Data Type	
1	Route of Administration	R		[1..1]		R	CE	If not entered – IRIS will assume based on default vaccine for vaccine group.
1.1	Route Identifier	R	50	[1..1]	NCIT/ 0162	R	ST	
1.2	Text	RE	40	[1..1]		RE	ST	
1.3	Name of Coding System	R	20	[1..1]		RE	ID	NCIT
2	Site	RE		[0..1]		RE	CWE	If not entered – IRIS will assume based on default vaccine for vaccine group.
2.1	Site Identifier	R	50	[0..1]	0163	R	ST	
2.2	Text	RE	40	[0..1]		RE	ST	
2.3	Name of Coding System	C(R/X)	20	[0..1]		RE	ID	

RXR Field Definitions

RXR-1 Route (CE) 00309

Definition: This field is the route of administration.
Refer to IRIS Table NCIT/0162- Route of Administration for valid values.

RXR-2 Administration Site (CWE) 00310

Definition: This field contains the site of the administration route from IRIS Table 0163.

RXR Segment Example

RXR|C28161^intramuscular^NCIT|LA^Left Arm^HL70163

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).

Table 5-13 Observation Segment (OBX)

SEQ	Element Name	CDC IG Usage	IRISHL7 Version 2.5.1			IRIS HL7 VERSION 2.5.1		COMMENTS/CONSTRAINT
			IRIS Len	Cardinality	Value Set (Table)	IRIS Usage	IRIS Data Type	
1	Set ID-OBX	R	4	[1..1]		R	SI	
2	Value type	R	3	[1..1]	0125	R	ID	
3	Observation Identifier*	R		[1..1]	NIP003	R	CE	This indicates what this observation refers to. It poses the question that is answered by OBX-5. *refer to table below
3.1	Observation ID	R	25	[1..1]		R	ST	
3.2	Observation Text	RE	8	[1..1]		RE	ST	
3.3	Name of Coding System	R	6	[1..1]		R	ID	If include OBX 3.1 must include OBX 3.3
4	Observation Sub-ID	R	20	[1..1]		R	ST	
5	Observation Value	R	*varies	[1..1]		R		This is the observation value and answers the question posed by OBX-3
5.1	Observation Identifier	R	8	[1..1]	0064	R	ST	Code set depends on observation

SEQ	Element Name	CDC IG Usage	IRISHL7 Version 2.5.1			IRIS HL7 VERSION 2.5.1		COMMENTS/CONSTRAINT
			IRIS Len	Cardinality	Value Set (Table)	IRIS Usage	IRIS Data Type	
					CDCPHINVS SCT ID001 NIP005			identifier sent in OBX-3.
5.2	Name or description of observation	CE	100	[1..1]		RE	ST	
5.3	Name of Coding System	C	6	[1..1]		C (R/RE)	ID	Required if OBX-2 is CE
11	Observation Result Status	R	20	[1..1]	0085	R	ID	Constrain to F.
14	Date/Time of Observation	RE				RE	TS_NZ	
14.1	Date	R	8	[1..1]		R	DTM	Comment Start Date
17	Observation Method	C(RE/O)				C(RE/O)	CE	If OBX-3.1 is “64994-7” VFC Eligibility
17.1	Identifier	R				R	ST	
17.2	Text	RE				RE	ST	
17.3	Name of Coding System	R			0396	R	ID	

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 format of the observation value in OBX. If the value is CE then the result must be a coded entry. For incoming Provider-IRIS data, Data Exchange accepts CE for Coded Entry. However, for IRIS-Provider, the system will send out values of CE, TS, NM for Coded Entry, Timestamp, and Number respectively, depending on what is actually sent in OBX-5.

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)
Please refer to the table below for the appropriate codes to report vaccine eligibility, contraindications, reactions, or adverse outcomes

Seq	Element name	VFC Eligibility	Vaccine Contraindications /Precaution	Reaction to Immunity	Vaccine Special Indications	History of Disease as Evidence of Immunity	Serological Evidence of Immunity
3	Observation Identifier						
3.1	Identifier	64994-7	30945-0	31044-1	59785-6	59784-9	75505-8
3.2	Text	Vaccine Eligibility	Contraindications	Reaction	Indications to immunize	Disease with presumed immunity	Diseases with serological evidence of immunity
3.3	Name of Coding System	LN	LN	LN	LN	LN	LN

NOTE: When indicating the patient's **Eligibility for VFC Vaccine**, use 64994-7 in this field and enter a the VFC code (HL7 0064) in OBX-5. Eligibility is **REQUIRED** for all new administered immunizations in which RXA.9 = 00 from public funded lots. If eligibility is not indicated for the incoming new immunization, the eligibility be defaulted to V01 'Ineligible'.

For Batch HL7 generated by IRIS and returned to Provider Organization, Batch HL7 Bi-directional and Organizational Extract, the system uses this field to send the LOINC Codes for **Series information** for combination vaccines. For each component of a combination vaccine, the system sends out a grouped set of two OBX segments. The first segment identifies the component antigen, and the second segment

identifies the Series count. OBX-3 is used to identify whether the component antigen or the valid series count is noted in OBX-5 respectively.

A provider must request the capability to receive series or recommendations in batch bi-directional exchange or organizational extracts from IRIS. Otherwise only demographic and immunization history will be returned to the provider practice.

Please refer to the table below for the codes that will be SENT by IRIS in bi-directional exchange:

Seq	Element name	Component Vaccine Type	Dose Number in Series	Vaccine Due Next	Date Vaccine Due	Vaccine Due Next dose Number	Earliest Date to Give	Reason applied
3	Observation Identifier							
3.1	Identifier	30956-7	30973-2	30979-9	30980-7	30973-2	30981-5	30982-3
3.2	Text	Vaccine Type	Dose number in series	Vaccine Due Next	Date Vaccine Due	Vaccine Next Due Dose Number	Earliest Date to Give	Reason applied by forecast logic to project this vaccine
3.3	Name of Coding System	LN	LN	LN	LN	LN	LN	LN

OBX-4 Observation Sub-ID (ST) 00572

Definition: This field is used to group related observations by setting the value to the same number.

This field may be used to link related components of an observation. Each component of the observation would share an Observation sub-id.

For example:
OBX|1|LN|^observation 1 part 1^^^^^|1|…
OBX|2|LN|^ observation 1 part 2^^^^^|1|…
OBX|3|DT|^a different observation^^^^^|2|…

Example:

The OBX-4 field groups together related OBX segments. For example, a single recommendation for MMR is sent in a grouped set of five OBX segments, all with the same sub-identifier in OBX-4. The sub-identifier increments sequentially.

The following is a single MMR recommendation, all sharing the same Observation sub-ID of 4 in OBX-4.

OBX|16|CE|30979-9^Vaccines Due Next^LN^^^|4|03^MMR^CVX^90707^MMR^CPT||||||F|
OBX|17|TS|30980-7^Date Vaccine Due^LN^^^|4|20050407||||||F|
OBX|18|NM|30973-2^Vaccine due next dose number^LN^^^|4|2||||||F|
OBX|19|TS|30981-5^Earliest date to give^LN^^^|4|20021105||||||F|
OBX|20|CE|30982-3^Reason applied by forecast logic to project this vaccine^LN^^^|4|^ACIP schedule||||||F|

OBX-5 Observation Value (varies) 00573

Definition: Text reporting Contraindication (CDCPHINVS or SCT), Special Indications (CDCPHINVS), History of Disease as Evidence of Immunity (SCT), Serological Evidence of Immunity (SCT), or Reaction (ID001/SCT). IRIS has imposed a CE data type upon this field.

The first component (5.1) is required for text reporting Contraindication, Special Indications, History of Disease as Evidence of Immunity, Serological Evidence of Immunity, or Reaction. The second component (5.2) is text summarizing contraindication, reaction or event. For component 5.3, use 'CDCPHINVS' or 'SCT' as appropriate contraindication/precaution, history of disease or serologic evidence of immunity values; 'ID001' for reaction; 'NIP005' for adverse events; HL70064 for VFC Eligibility

OBX|1|CE|64994-7^Vaccine Eligibility^LN|6|V22^CHIP^HL70064||||||F|||20060827||||XVC40^per immunization^CDCPHINVS
OBX|2|CE|59784-9^History of Disease as Evidence of Immunity^LN|2|40468003^History of Hep A infection^SCT||||||F|||20030207
OBX|3|CE|75505-8^Serological Evidence^LN|3|371113008^Serology confirmed varicella^SCT||||||F|||20010307
OBX|4|CE|30945-0^Contraindication^LN|4|VXC17^allergy 2-phenoxyethanol^CDCPHINVS||||||F|||20010407
OBX|5|CE|31044-1^Vaccination Reaction^LN|5|VXC15^Intussusception within 30 days of dose^CDCPHINVS||||||F|||20110519
OBX|6|CE|59785-6^Vaccination Special Indications^LN|1|VXC8^Member of special group^CDCPHINVS||||||F|||20010107

For Batch HL7 IRIS-Provider, Batch HL7 Bi-directional, and Organizational Extract, this field holds the value observed for series information and recommendations. The value corresponds to the LOINC in OBX-3. For example, for recommendations, the fourth OBX segment is for the Earliest date. OBX-3 contains the code 30981-5 and OBX-5 contains the actual earliest date as follows:

OBX|19|TS|30981-5^Earliest date to give^LN^^^|4|20021105|||||F|

Please see the end of the OBX field notes for complete examples of how IRIS sends Series for combination vaccines and Recommendations.

OBX-11 Observation Result Status (ID) 00579

Definition: This field contains the observation result status. The expected value is F or final.

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. IRIS ignores any time component.

OBX-17 Observation Method (CE)

Definition: This optional field can be used to transmit the method or procedure by which an observation was obtained when the sending system wishes to distinguish among one measurement obtained by different methods and the distinction is not implicit in the test ID. In this Guide, it shall be used to differentiate the way that VFC Eligibility Status was collected. Refer to Table 0396.

NOTE 1: Complete Example of IRIS's use of OBX to send Series Information for Combination Vaccines:

A single dose of combination vaccine may have a different series dose count for each component. For Batch HL7 IRIS-Provider, Batch HL7 Bi- directional, and Organizational Extract, the system sends a grouped set of two OBX segments for each component in a combination vaccine. For example, a single dose of DTaP-IPV is sent as below. The first and second OBX segments express the dose count of 5 for DTaP. The third and fourth OBX segments express the dose count of 4 for Polio.

RXA|0|1|20160201|20160201|130^DTaP-IPV^CVX^90696^DTaP-IPV^CPT|1.0|mL||00^New Immunization Administered^NIP001||^^^Valley Clinic||||TEST3242||PMC^Sanofi Pasteur Inc. (Connaught and Pasteur Merieux)^MVX|||CP|A

OBX|9|CE|30956-7^ VACCINE TYPE^LN|1|107^DTP/aP^CVX||||||F
OBX|10|NM|30973-2^Dose number in series^LN|1|5||||||F
OBX|11|CE|30956-7^VACCINE TYPE^LN|2|89^Polio^CVX||||||F
OBX|12|NM|30973-2^Dose number in series^LN|2|4||||||F

NOTE 2: Complete Example of IRIS's use of OBX to send Recommendation Information:

For Batch HL7 VXU IRIS-Provider, Batch HL7 VXU Bi-directional, and Organizational Extract, where the provider practice has indicated to IRIS staff that they wish to receive recommendations, a single recommendation is sent in a grouped set of five OBX-segments, which follow a place-holder RXA segment that does not represent any actual immunization administered to the patient. The five OBX segments in order express the Vaccine of the recommendation, the recommended date, the dose of the next vaccine due, the earliest date to give, and the reason for the recommendation, which is always the ACIP schedule.

RXA|0|0|20010407|20010407|998^No Vaccine Administered^CVX|999|0
OBX|1|CE|30979-9^Vaccines Due Next^LN^^^|1|20^DTP/aP^CVX^90700^DTP/aP^CPT||||||F|
OBX|2|TS|30980-7^Date Vaccine Due^LN^^^|1|20010607||||||F|
OBX|3|NM|30973-2^Vaccine due next dose number^LN^^^|1|1||||||F|
OBX|4|TS|30981-5^Earliest date to give^LN^^^|1|20010519|||||F|
OBX|5|CE|30982-3^Reason applied by forecast logic to project this vaccine^LN^^^|1|^ACIP schedule|||||F|
OBX|6|CE|30979-9^Vaccines Due Next^LN^^^|2|45^HepB^CVX^90731^HepB^CPT||||||F|
OBX|7|TS|30980-7^Date Vaccine Due^LN^^^|2|20010407||||||F|
OBX|8|NM|30973-2^Vaccine due next dose number^LN^^^|2|1||||||F|
OBX|9|TS|30981-5^Earliest date to give^LN^^^|2|20010407|||||F|
OBX|10|CE|30982-3^Reason applied by forecast logic to project this vaccine^LN^^^|2|^ACIP schedule|||||F|

The ability to send Recommendations in these grouped OBX segments applies to HL7 Version 2.4 and HL7 2.5.1. It applies to Batch HL7 IRIS-Provider, Batch HL7 Bi-directional, Real-time HL7, and Organizational Extract. IRIS staff must modify the configuration of the organizations data exchange set up to allow Recommendations to be sent in this way.

The Send Series/Recommend option is also available for Organizational Extract upon request to IRIS staff. If the provider does not request series or recommendations in the organizational extract then the system will omit sending the information.

NOTE 3: X0001-0^Missed Opportunity Vaccine Type^LN OBX-3 is an IRIS specific LOINC used in our AFIX reporting to denote a missed opportunity to receive a vaccine. Missed Opportunities are only sent on outbound files.

NTE—Note Segment

The NTE segment is used for sending notes and comments.

NOTE – IRIS does not utilize data from this optional segment. If this segment is sent although no error will result, the data will not be stored.

Please refer to the CDC HL7 Version 2.5.1 Implementation Guide for Immunization Messaging Release 1.5 for details on this segment.

BTS—Batch Trailer Segment

Table 5-14 Batch Trailer Segment (BTS)

SEQ	Element Name	CDC IG Usage	IRIS HL7 VERSION 2.5.1					COMMENTS/CONSTRAINT
			IRIS Len	Cardinality	Value Set (Table)	IRIS Usage	IRIS Data Type	
1	Batch Message Count	O	10	[1..1]		R	ST	
2	Batch Comment	O	80	[0..1]		O	ST	Not defined by CDC IG, see HL7 definition.
3	Batch Totals	O				O	NM	

BTS field definitions

BTS-1 - BTS-3 Not anticipated to be used for immunization messages.

BTS-1 Batch Message Count

Definition: This field contains the count of the individual messages contained within the batch.

BTS-2 Batch Comment/Type (ST) 00090 (HL7 Definition)

Definition: This field is a comment field that is not further defined in the HL7 protocol.

Free text, which can be included for convenience, has no effect on processing

BTS-3 Batch Totals/Type (NM) 00095 (HL7 Definition)

Definition: We encourage new users of this field to use the HL7 Version 2.5 data type of NM and to define it as "repeating." This field contains the batch total. If more than a single batch total exists, this field may be repeated.

BTS Segment Example

BTS|1

FTS—File Trailer Segment

Table 5-15 File Trailer Segment (FTS)

SEQ	Element Name	CDC IG Usage	IRIS HL7 VERSION 2.5.1					COMMENTS/CONSTRAINT
			IRIS Len	Cardinality	Value Set (Table)	IRIS Usage	IRIS Data Type	
1	File Batch Count	O	10	[0..1]		R	NM	
2	File Trailer Comment	O	80	[0..1]		O	ST	

FTS field definitions

FTS-1 File Batch Count

Definition: The number of batches contained in this file. IRIS normally sends one batch per file and discourages sending multiple batches per file.

FTS-2 File Trailer Comment

Definition: Free text, which may be included for convenience, but has no effect on processing. FTS Segment Example

FTS|1

6. Profile Z23 Return an Acknowledgement

Introduction:

Profile Z23 – Return Acknowledgement is a **constrainable** profile based on the ACK message.
The **goal** of this interaction is to acknowledge receipt and processing of a partner message (VXU or QBP). The Sending System may be an Electronic Health Record system (EHRs), an Immunization Information System (IIS) or another type of health information system.

Interaction Definition:

The sender sends an immunization record in a VXU message. The trigger may be an update or new record in the sending system records or may be triggered by some other event. The receiver accepts the message and processes it. The receiver sends an acknowledgment message in an ACK message. The transactions that are of interest are indicated by bold arrows. It is important to note that the message may pass through intermediaries, such as a Health Information Exchange (HIE). The message comes from the initiating sender and the acknowledgement MUST be returned to the initiating system.

Static Definition- Message Level

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

Table 6-1 Message Acknowledgement (ACK)

Table 6-1 Message Acknowledgement Segment (ACK)			
Segment	**Cardinality**	**Usage**	**Comment**
MSH	(1..1)	R	For details please see MSH details in chapter 5 of this IG
MSA	(1..1)	R	
[{ERR}]	(0..*)	RE	Include if there are errors.

MSA—Message Acknowledgement Segment

Table 6-2 Message Acknowledgement Segment (MSA)

SEQ	Element Name	CDC IG Usage	IRIS HL7 VERSION 2.5.1					COMMENTS/CONSTRAINT
			IRIS Len	Cardinality	Value Set (Table)	IRIS Usage	IRIS Data Type	
1	Acknowledgment Code	R	2	[1..1]	0008	R	ID	
2	Message Control ID	R	20	[1..1]		R	ST	

MSA Field Definitions

MSA-1 Acknowledgment Code (ID) 00018

Definition: This field contains an acknowledgment code. See message processing rules. AA (Application Accept) means the message was processed normally. AE (Application Error) means an error prevented normal processing. An error message will be put in MSA-3, and for ACK messages the optional ERR segment will be included.

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 Segment Example

MSA|AE|00000123

ERR—Error Segment

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

Table 6-3 Error Segment (ERR)

SEQ	Element Name	CDC IG Usage	IRIS HL7 VERSION 2.5.1					COMMENTS/CONSTRAINT
			IRIS Len	Cardinality	Value Set (Table)	IRIS Usage	IRIS Data Type	
2	Error Location	RE		[0..1][2]		RE	ERL	
3	HL7 Error Code	R		[1..1]	0357	R	CWE	
3.1	Error Code	R		[1..1]	0357	R	ST	
3.2	Description	RE		[1..1]	0357	RE	ST	
3.3	Table Name	C(R/X)		[1..1]	0396	C(R/X)	ID	If ERR-3.1(Identifier) is valued
4	Severity	R		[1..1]	0516	R	ID	
5	Application Error Code	RE			0533	RE	CWE	
8	User Message	RE				RE	TX	

ERR field definitions:

Note: ERR-1 is not supported for use in messages starting with version 2.5.

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 it is unable to be parsed, 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". The Severity code indicates if the system sending the ACK or RSP (with error) is reporting an error that caused significant error loss. For instance the message was rejected or an important segment was rejected (e.g. RXA). This allows the system that initiated the message (VXU or QBP) to alert the user that there were issues with the data sent.

Note that the definitions of these codes has been clarified and corrected.

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 appropriate values.

Note this field is CWE data type. It includes 2 triplets for coded values. One triplet is reserved for Table 0533 values. The other may optionally contain more granular, but equivalent, local codes.

ERR-8 User Message (TX) 01817

Definition: The text message to be displayed to the application user.

Example with error:

MSH|^~\&|IRIS2.0|IRIS||P36|20171114104029.047||ACK^V04^ACK|NIST-IZ-AD-2.1_Send_V04_Z22|P|2.5.1|||NE|NE|||||Z23^CDCPHIMVS|IRIS|P36
MSA|AE|NIST-IZ-AD-2.1_Send_V04_Z22
ERR||RXA^1^15^1|207^Application internal error^HL70357|E|3^Illogical Value error^HL70533|||Immunization added but not deducted from inventory. Vaccine Lot not found in IRIS.

7. Messages for Transmitting Immunization Information

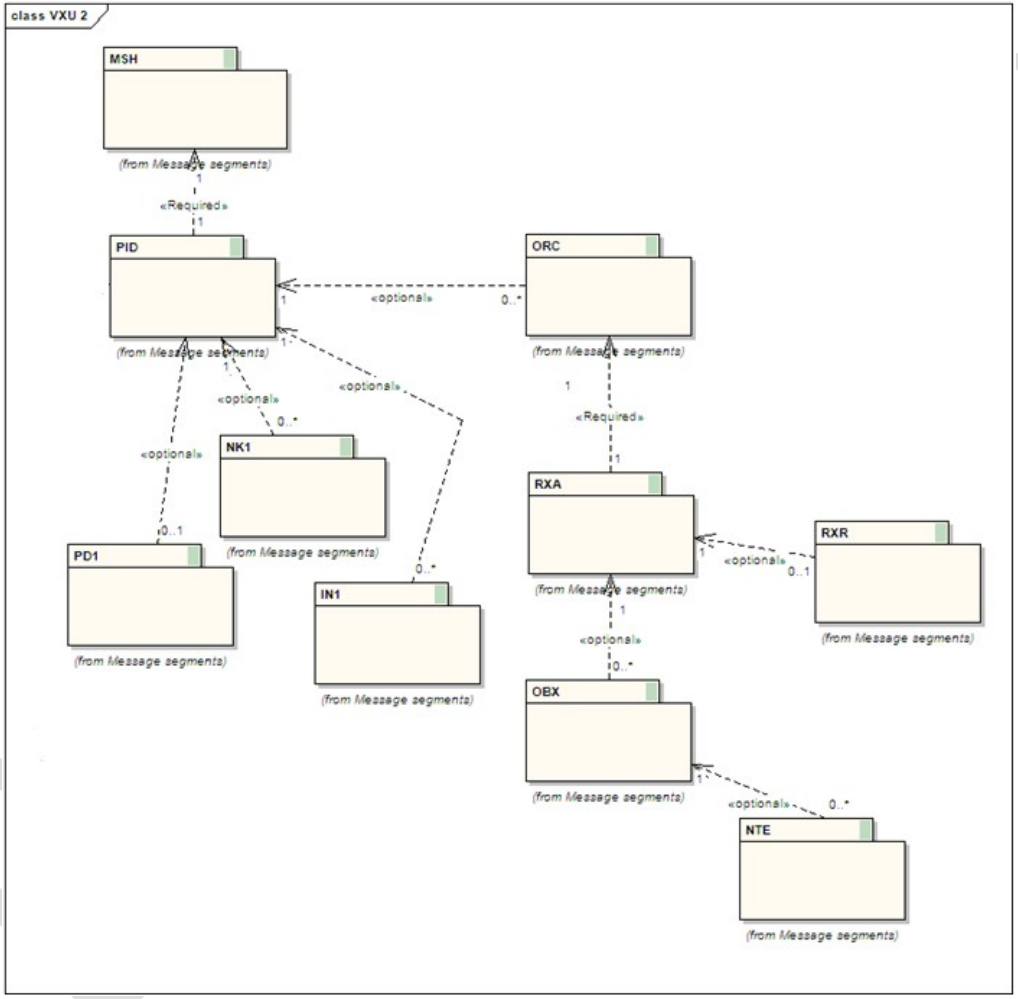
This chapter describes each of the messages used to accomplish the use cases described in Chapter 2. These messages are built from the segments described in Chapter 5, Segments and Message Details. The Segments are built using the Data Types specified in Chapter 4. Readers are referred to these chapters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

Table 7-1-Supported Messages

Message	Purpose	Associated Profiles	Definition	IRIS Supported
VXU	Send Immunization History	Z22^CDCPHINVS	**Send Unsolicited Immunization Update**	Yes
QBP	Request Immunization History and Request Person Id	Z34^CDCPHINVS	**Request Immunization History**	Yes- Specifications detailed in IRIS 2.5.1 Query IG.
		Z44^CDCPHINVS	**Request Evaluated History and Forecast**	
RSP	Respond to Request for Immunization Record and Respond to Request for Person Id	Z31^CDCPHINVS	**Return Candidate Clients** (multiple possible matches)	All Except Z31. Specifications detailed in IRIS 2.5.1 Query IG.
		Z32^CDCPHINVS	**Return Immunization History** (single client match found to Z34 query)	
		Z33^CDCPHINVS	**Return Acknowledgement** (no match, too many match, error)	
		Z42^CDCPHINVS	**Return Evaluated History and Forecast** (single client match found to Z44 query)	
ACK	Send Message Acknowledgement	Z23^CDCPHINVS	**Return Message Acknowledgement**	Yes

Send Immunization History--VXU

As previously discussed in Chapter 5, 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. Table 5.1 lists the segments that are part of a VXU. See Appendix B for detailed activity diagrams and example messages that illustrate the processing of this message.



Acknowledging a Message—ACK

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

Table 7-2 Message Acknowledgement Segment (ACK)

Segment	CDC IG Cardinality	*IRIS* Cardinality	CDC IG Usage	*IRIS* Usage	Comment
MSH	(1..1)	(1..1)	R	R	
MSA	(1..1)	(1..1)	R	R	
[{ERR}]	(0..*)	(0..1*)	RE	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.

Query and Response Profile (QBP/RSP)

Query specifications available in separate documentation

Appendix A: See Separate Code Table Document

Appendix B: Guidance on Usage and Example Messages

Use of MSH-4, MSH-22, ORC-17 and RXA-11

Scenario	MSH-4	MSH-22	ORC-17	RXA-11
Individual Org	Org	Org	Org	Org
Parent-Child, including: - hospital and the different departments - provider w/ multiple locations - health group w/ multiple providers	Parent	Child	Child	Child

-The above table addresses Administered/Owned (00) immunizations

-To utilize auto-decrement, ORC -17 and RXA-11.4 must contain the same IRIS ID

VXU Example v2.5.1 release 1.5

FHS|^~\&|MYEHR|^36||IRIS|20171114113335-0700||filename1.hl7|WEEKLY HL7 UPLOAD|00009972
BHS|^~\&|MYEHR|^36||IRIS|20171114113335-0700||||00010223
MSH|^~\&|MYEHR|36||IRIS|20171114113335-0700||VXU^V04^VXU_V04|00000123|P|2.5.1|||ER|AL|||||Z22^CDCPHINVS|36^^^^^IDA^LR^^^36|IRIS
PID|1||23LR999^^^IDA^PI||MAGUIRE^JERRY^M^JR^^^L|CARRINGTION^ALEXIS^^^^^L|20110227|M||2106-3|123 EXAMPLE STREET^APT.
1^BOISE^ID^83704^US^L^^ID001|||^PRN^CP^^^208^5551234~^NET^X.400^j.maguire@yahoo.com||||||||2186-5||Y|2
PD1||||||||||02|N|20170423|||A|20170423
NK1|1|CARRINGTION^ALEXIS^^^^^L|MTH^Mother^HL70063|123 EXAMPLE STREET^APT. 1^BOISE^ID^83704^USA^M^^ID001||^PRN^CP^^^208^555123
NK1|2|MAGUIRE^JERRY^^SR^^^L|FTH^Father^HL70063
IN1|1|ABC123|60095^^NAIC^NIIP||||||||||||5|||||||||||||20170423||||||EFG88|
ORC|RE||27312005^P36|||||||^GREEN^CASSANDRA||^BROWN^JANET^J^^DR|||||36^VALLEY CLINIC^L|
RXA|0|1|20170423|20170423|03^MMR^CVX^^^|0.5|mL||00^New Immunization Administered^NIP002|123456789^SMITH^JOHN^J^RN^MR^^^IDA^^^^MD|^^^36|
|||CC69852|20180319|MCK^MERCK ^MVX|||CP|A
RXR|IM|LA
OBX|1|CE|64994-7^vaccine fund pgm elig cat^LN|1|V01^Not VFC eligible ^HL70064|||||F|||20170423|||VXC40^per immunization^CDCPHINVS
OBX|2|CE|75505-8^serological Evidence of Immunity^LN|23|371113008^Serology Varicella Infection^NIP004|||||F|||20150423|||
MSH|^~\&|MYEHR|36||IRIS|20120302||VXU^V04^VXU_V04|00000124|P|2.5.1|||ER|AL|||||Z22^CDCPHINVS|36^^^^^IDA^LR^^^36|IRIS
PID|1||789456^^^IDA^PI||SMYTHE^SARAH^M^^L|ROBINSON^MARY^^^^^L|19540812|F||2106-3|44 ROSE RD^^MOUNTAIN HOME^ID^83647^US^L^^ID039|
|^PRN^CP^^^208^7755555~^NET^X.400^itsme@gmail.com||||||||2186-5||Y|2
PD1||||||||||02|N|20170626|||A|20170626
ORC|RE||98712005^P36|||||||^WHITE^HENRY||^GREEN^JUNE^J^^DR|||||36^VALLEY CLINIC^L|
RXA|0|1|20160626|20160626|133^PCV13^CVX^^^|0.5|mL||02^historical^NIP002||^^^36||||pneu123456||PFR^PFIZER^MVX|||CP|A

BTS|2
FTS|1

ACK Example v2.5.1 release 1.5

FHS|^~\&|IRIS2.0|IRIS||P36|20171114114924-0700||90188.response||00009972
BHS|^~\&|IRIS2.0|IRIS||P36|20171114114924-0700||||00010223
MSH|^~\&|IRIS2.0|IRIS||P36|20171114114924-0700||ACK^V04^ACK|00000123|P|2.5.1|||NE|NE|||||Z23^CDCPHIMVS|IRIS|P36
MSA|AE|00000123
ERR||RXA^1^15^1|207^Application internal error^HL70357|E|3^Illogical Value error^HL70533|||Immunization added but not deducted from inventory. Vaccine Lot not found in IRIS.
MSH|^~\&|IRIS2.0|IRIS||P36|20171114114924.532||ACK^V04^ACK|00000124|P|2.5.1|||NE|NE|||||Z23^CDCPHIMVS|IRIS|P36
MSA|AA|00000124
BTS|2
FTS|1