



San Antonio Immunization Registry System HL7 2.5.1 Local Implementation Guide

San Antonio Metropolitan Health District

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Change Log

The following table captures the progression of this document over time.

Version	Date	Description	Author
1.0	06/26/2012	Initial version of document	Ray Seggelke
1.1	12/17/2012	Updates made during implementation.	Nichole Lambrecht

DISCLAIMER: The CDC has published a template document for a Local Implementation Guide. This document is heavily based on the CDC's Local Implementation Guide for HL7 2.5.1 Immunization Messaging, version 1.3 dated 12/03/2011. Much of the format and content of this document is based off the material found in the CDC's document.

1. Overview

Introduction

There are numerous providers across the jurisdiction served by SAIRS Immunization Information System (IIS) who administer immunizations to patients and desire to report this information to the IIS. In some cases, the provider may be a direct entry provider and will use the standard user interface to interact with the system. In other cases, these providers already have full-featured electronic systems (e.g., Electronic Medical Record systems, Clinic Management Systems, etc.), and they desire to exchange electronic messages with the IIS.

In order for different health information systems to exchange data, the structure and content of the data to be exchanged must be standardized. To this end, the Centers for Disease Control (CDC) has completed a series of efforts related to defining a standard approach for exchanging immunization-related data.

Three controlling documents define how the SAIRS HL7 Interface will behave. Figure 1 shows the hierarchy of documents, each refining and constraining the HL7 Standard.

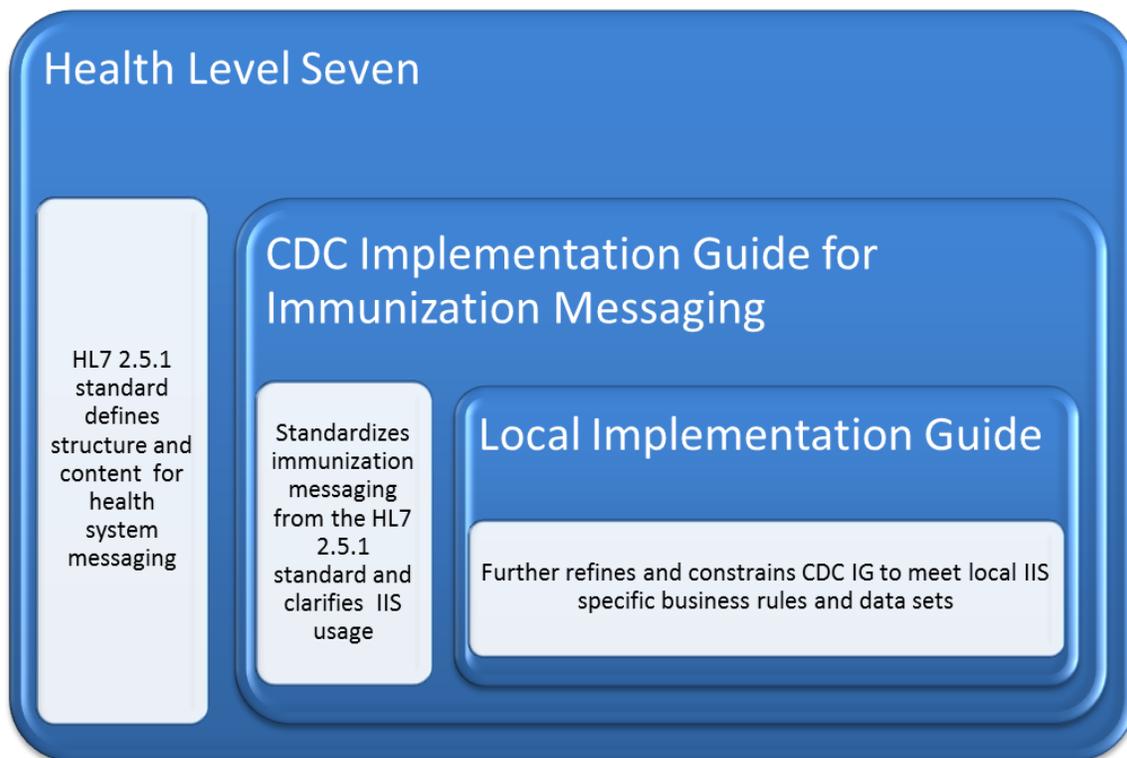


Figure 1: HL7 Controlling Document Hierarchy

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 is the CDC's HL7 2.5.1 Implementation Guide for Immunization Messaging, Release 1.3 (CDC IG). This guide gives specific instructions regarding how to report to immunization information systems, but still leaves some implementation decisions to each state IIS. This guide and other technical information can be obtained from the CDC's website at <http://www.cdc.gov/vaccines/program/iis/stds/standards.htm>.

The third document is this document. It captures the applicable implementation decisions and defines what SAIRS will and will not accept in an HL7 message. This document has been written in accordance with the standards set in the first two documents. It highlights differences from the CDC IG by adding additional columns to the tables. In cases where this guide differs from the CDC IG, this guide will provide both the CDC IG column followed the local usage specification. This should prove highly useful to implementers of external systems by allowing them to accurately compare the CDC IG with this local implementation guide.

Intended Audience

This Local IG is intended for technical groups from EMR (Electronic Medical Record) systems, EHR (Electronic Health Record) system, other state-level systems, etc. that will exchange HL7 message with SAIRS.

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 and 3 of the CDC IG provide HL7 foundational concepts and set the stage for this Local IG. The goal of this Local IG is to provide an unambiguous specification for creating and interpreting messages.

Scope

When considering the HL7 Interface within SAIRS, it is helpful to view the IIS as a repository of information. The typical approach is for external systems to use the HL7 interface to submit requests to SAIRS. The HL7 interface supports the following scenarios/interactions between the Registry and an external system:

- The external system submits a query message to the Registry. The Registry will process the request and respond as appropriate, including:
 - Returning the relevant demographic information and immunization history for the matching individual. The results will also include any vaccine recommendations for the patient (based on their current history) and any adverse reaction data.
 - Returning a list of patient records that match the incoming query (along with additional demographic data to allow the requesting system to submit a more detailed query)
 - Returning an acknowledgement of the query if no matching patient records were found
 - Returning an error that occurred during the messaging process

- The external system submits an update message to the Registry. The Registry will process the message and respond as appropriate, returning an acknowledgement of the incoming message along with any errors that occurred during the messaging process.
- An end user submits a batch file containing multiple update messages. The Registry will process this file during non-peak hours and will prepare a results file containing the acknowledgement information (including and errors) for each message in the batch file.
- An end user submits a request for the Registry to generate a file containing the complete demographic information and immunization history for all patients matching the incoming request. The Registry will process this request during non-peak hours and prepares the batch file containing the appropriate messages.

At this time, SAIRS will not initiate the exchange of information with another system via HL7 messaging. It will only respond to requests submitted by external systems.

Organization and Flow

This Local IG is designed to mirror the organization and flow of the CDC IG. This chapter of this guide defines the high-level use cases supported by SAIRS. The subsequent chapters define how SAIRS 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 3 of the CDC IG have not been redefined and usage has not been changed
- Standardized vocabulary is supported as specified in the CDC IG
- To the extent possible, data sets and business rules will adhere to the CDC IG.

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

2. Actors, Goals, and Messaging Transactions

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

There are nine use cases defined in Chapter 2 of the CDC IG. Table 2-1 lists each of them and if/how they are implemented within SAIRS.

USE CASE TITLE	GOAL	SUPPORTED BY SAIRS?
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.	SAIRS only supports this via an outgoing batch file. (Refer to the "Return Immunization History" for additional related information.)
Receive Immunization History	To receive an unsolicited immunization history. It may be an update or a new record.	SAIRS will accept this type of message from any external system (assuming they are able to successfully authenticate).
Request Immunization History	To request an immunization history from another system.	SAIRS does not send this type of message to another system.
Return Immunization History	To return an immunization history to another system.	SAIRS will send the immunization history for a patient as a response to an incoming query (if the query results in a match to a single patient record). SAIRS will not send out this as an unsolicited message. It must be requested by the external system.
Accept Requested History	To accept an immunization history in response to a query for an immunization history from another system.	SAIRS does not request immunization history, so it does not accept this type of message. Refer to "Return Immunization History" for additional related information.
Send Demographic Data	To send demographic data about a person. It may be an update or a new record.	SAIRS will send the demographic data for a patient as a response to an incoming query (if the query results in a match to a single patient record). SAIRS will not send out this as an unsolicited message. It must be requested by the external system.
Accept Demographic Data	To accept demographic data about a person. It may be an update or a new record.	SAIRS will accept this type of message from any external system (assuming they are able to successfully authenticate).
Acknowledge Receipt	To acknowledge receipt of a message. This can be an immunization history, request for immunization history,	SAIRS will send this type of message as a response to any incoming request.

USE CASE TITLE	GOAL	SUPPORTED BY SAIRS?
	demographic update, observation report or request for personal id. It may indicate success or failure. It may include error messages.	
Report Error	To send error messages related to submitted messages. These errors could result of rejection of message or parts of message.	SAIRS will send this type of message as a response to any incoming request when a warning or hard error occurs during processing.

Table 2-1: CDC IG Use Cases mapped to SAIRS

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. These attributes are generically referred to as elements. Table 3-1 defines the Usage Codes contained in this implementation guide. (These are the same definitions contained in the CDC IG.)

USAGE CODE	INTERPRETATION	NOTES
R	Required	<p>A conforming sending application shall populate all "R" elements with a non-empty value.</p> <p>A conforming receiving application shall process or ignore the information conveyed by required elements.</p> <p>A conforming receiving application:</p> <ul style="list-style-type: none"> • Must not raise an error due to the presence of a required element • May raise an error due to the absence of a required element.
RE	Required but may be Empty	<p>The element may be missing from the message, but it must be sent by the sending application if there is relevant data.</p> <p>A conforming sending application should be capable of providing all "RE" elements.</p> <ul style="list-style-type: none"> • If it knows the required values for the element, then it must send that element. • If it does not know the required values, then that element will be omitted. <p>A conforming receiving application is expected to process or ignore data contained in the element, but must be able to successfully process the message if the element is omitted (i.e., no error message should be generated because the element is missing).</p>
C	Conditional	<p>This usage has an associated condition predicate. This predicate is an attribute within the message.</p> <p>If the predicate is satisfied:</p> <ul style="list-style-type: none"> • A conforming sending application must always send the element. • A conforming receiving application must process or ignore data in the element. <ul style="list-style-type: none"> ○ It may raise an error if the element is not present. <p>If the predicate is not satisfied:</p>

USAGE CODE	INTERPRETATION	NOTES
		<ul style="list-style-type: none"> • A conforming sending application must not send the element. • A conforming receiving application must not raise an error if the condition predicate is false and the element is not present. <ul style="list-style-type: none"> ○ It may raise an error if the element IS present.
CE	Conditional but may be Empty	<p>This usage has an associated condition predicate. This predicate is an attribute within the message.</p> <p>If the predicate is satisfied:</p> <ul style="list-style-type: none"> • A conforming sending application should be capable of providing all "CE" elements (when the predicate is true). <ul style="list-style-type: none"> ○ If it knows the required values for the element, then it must send that element. ○ If it does not know the required values, then that element will be omitted. • A conforming receiving application is expected to process or ignore data contained in the element, but must be able to successfully process the message if the element is omitted (i.e., no error message should be generated because the element is missing). <p>If the predicate is not satisfied:</p> <ul style="list-style-type: none"> • A conforming sending application shall not populate the element. • A conforming receiving application may raise an application error if the element is present.
O	Optional	<p>This element may be present if specified in local profile. Local partners may develop profiles that support use of this element. In the absence of a profile, a conforming sending application will not send the element.</p> <p>A conforming receiving application will ignore the element if it is sent, unless local profile specifies otherwise. It may not raise an error if it receives an unexpected optional element.</p>
X	Not Supported	<p>The element is not supported.</p> <p>A conforming sending application should not send this element.</p> <p>A conforming receiving application should ignore this element if present. It may raise an error if it receives an unsupported element.</p> <p>Any profile based on this Guide should not specify use of an element that is not supported in this Guide.</p>

Table 3-1: Usage Code Definitions

4. HL7 Data Types

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

5. Segments and Message Details

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

HL7 2.5.1 Message Segments

Table 5-1: HL7 2.5.1 Message Segments Table 5-1 lists each of the message segments contained in the immunization-related HL7 2.5.1 messages along with an indication of if/how SAIRS supports each segment.

SEGMENT	DEFINITION	MESSAGE USAGE	CDC IG USAGE	SAIRS USAGE	NOTES
BHS (Batch Header Segment)	The Batch Header Segment wraps a group of 1 or more messages. These may be a mixture of acceptable message types. This segment is not required for real-time messaging. That is, a stream of messages may be sent without a BHS. A system may choose to require BHS for all groups of messages, but should specify this requirement in a local implementation Guide.	Any	Optional	Optional. Not required for batch messages submitted to SAIRS. <i>Note: Unless prior approval is received, batches should only be uploaded through the SAIRS user interface and not submitted through the web service.</i>	Used at the beginning of any batch of messages.
BTS (Batch Trailer Segment)	The BTS segment defines the end of a batch. It is required if the message has a matching BHS.	Any	Required if message starts with BHS	Required if message starts with BHS	Used to mark the end of any batch of messages. If the batch of messages starts with a BHS, then this segment is required.
ERR (Error Segment)	The error segment reports information about errors in processing the message. The segment may repeat. Each error will have its' own ERR segment.	ACK, RSP	Ability to create and process is required for conformant systems.	Supports the ability to create and process messages with this segment.	Used to return information about errors.

SEGMENT	DEFINITION	MESSAGE USAGE	CDC IG USAGE	SAIRS USAGE	NOTES
EVN (Event Segment)	The EVN segment is used to communicate necessary trigger event information to receiving applications. Valid event types for all chapters are contained in HL7 Table 0003 - Event Type	ADT	Required for ADT message.	Not supported	Used to convey event trigger information.
FHS (File Header Segment)	The file header segment may be used to group one or more batches of messages. This is a purely optional segment, even if batches are sent. Its' use is not anticipated for use in real-time transactions.	Any	Optional	Optional. Not required for batch messages submitted to SAIRS. <i>Note: Unless prior approval is received, batches should only be uploaded through the SAIRS user interface and not submitted through the web service.</i>	Used to mark the beginning of a file of batches.
FTS (File Trailer Segment)	The FTS segment defines the end of a file of batches. It is only used when the FHS segment is used.	Any	Required to terminate a file of batches. (Matches FHS)	Required to terminate a file of batches. (Matches FHS)	Used to mark the end of a file of batches. If a file of batches has an FHS at the beginning, then this segment is required.
IN1-3 (Insurance Segment)	The IN1-IN3 segments contain insurance policy coverage information necessary to produce properly prorated and patient and insurance bills.	VXU	Optional	Not Supported	This segment is not anticipated for use in immunization messages, but may be specified for local use.
MSA (Message Acknowledgement Segment)	This segment is included in the query response (RSP) and acknowledgment (ACK) messages. It contains information used to identify the receiver's acknowledgement response	RSP, ACK	Ability to create and process is required for conformant systems	Supports the ability to create and process messages with this segment.	

SEGMENT	DEFINITION	MESSAGE USAGE	CDC IG USAGE	SAIRS USAGE	NOTES
	to an identified prior message.				
MSH (Message Segment Header)	The MSH segment defines the intent, source, destination, and some specifics of the syntax of a message.	All	Ability to create and process is required for conformant systems.	Supports the ability to create and process messages with this segment.	This begins every message and includes information about the type of message, how to process it, and by whom it was created
NK1 (Next of Kin Segment)	The NK1 segment contains information about the patient's next of kin or other related parties. Any associated parties may be identified.	VXU, ADT, RSP	Ability to create and process is required for conformant systems	Supports the ability to create and process messages with this segment.	Used to carry information about the next of kin for a client.
NTE (Note Segment)	The NTE segment is used for sending notes and comments. It is used in relation to OBX in the VXU and RSP.	VXU, ADT, RSP	Ability to create and process is required for conformant systems.	Supports the ability to create and process messages with this segment.	Used to carry a note related to the parent segment.
OBX (Observation Result Segment)	The observation result segment has many uses. It carries observations about the object of its parent segment. In the VXU/RSP it is associated with the RXA or immunization record. The basic format is a question and an answer.	ADT, VXU, RSP	Ability to create and process is required for conformant systems.	Supports the ability to create and process messages with this segment.	Used to report one atomic part of an observation.
ORC (Order Request Segment)	The Common Order segment (ORC) is used to transmit fields that are common to all orders (all types of services that are requested). While not all immunizations recorded in an immunization message are able to be associated with an order, each RXA	VXU, RSP	Ability to create and process is required for conformant systems.	Supports the ability to create and process messages with this segment.	Used to give information about a group of one or more orders (typically RXA).

SEGMENT	DEFINITION	MESSAGE USAGE	CDC IG USAGE	SAIRS USAGE	NOTES
	must be associated with one ORC, based on HL7 2.5.1 standard.				
PD1 (Patient Demographic Segment)	The patient additional demographic segment contains demographic information that is likely to change about the patient. In immunization messages, this is information about the need to protect the client's information, how they should be part of reminder efforts and their current status in the IIS.	VXU, RSP, ADT	Ability to create and process is required for conformant systems.	Supports the ability to create and process messages with this segment.	Used to give information about a patient. A primary use in immunization messages is to give information about privacy and whether contact is allowed.
PID (Patient Identifier Segment)	This segment contains permanent patient identifying and demographic information that, for the most part, is not likely to change. Used by all applications as the primary means of communicating patient identification information frequently.	VXU, ADT, RSP	Ability to create and process is required for conformant systems.	Supports the ability to create and process messages with this segment.	Used to carry information about the patient/client.
PV1 (Patient Visit Segment)	This segment contains information related to a specific visit.	VXU, ADT, RSP	Optional	Supports the ability to create and process messages with this segment.	Contains funding program eligibility status at the patient level. Use OBX for documenting the funding program eligibility status at the immunization level.
QAK (Query Acknowledgement Segment)	The QAK segment contains information sent with responses to a query.	RSP	Ability to create and process is required for conformant systems.	Supports the ability to create and process messages with this segment.	

SEGMENT	DEFINITION	MESSAGE USAGE	CDC IG USAGE	SAIRS USAGE	NOTES
QPD	Query parameter definition	QBP, RSP	Ability to create and process is required for conformant systems.	Supports the ability to create and process messages with this segment.	
RCP	Response control parameter segment	QBP	Ability to create and process is required for conformant systems.	Supports the ability to create and process messages with this segment.	
RXA	Pharmacy/Treatment Administration Segment	VXU, RSP	Ability to create and process is required for conformant systems.	Supports the ability to create and process messages with this segment.	
RXR	Pharmacy/Treatment Route Segment	VXU, RSP	Ability to create and process is required for conformant systems.	Supports the ability to create and process messages with this segment.	

Table 5-1: HL7 2.5.1 Message Segments

BHS – Batch Header Segment

SAIRS is capable of processing messages batch VXU messages from an external system. (No other message types may be submitted in batch.) The use of a BHS is optional for these batches.

Note: Unless prior approval is received, batches should only be uploaded through the SAIRS user interface and not submitted through the web service.

Table 5-2 lists the fields that are part of the BHS segment.

SEQ	LEN	Data Type	CDC IG Cardinality	SAIRS Cardinality	Value Set	Element Name	CDC IG Usage	SAIRS Usage	Constraint
1	1	ST	[1..1]	[1..1]		Batch Field	R	R	The BHS.1 field shall be

SEQ	LEN	Data Type	CDC IG Cardinality	SAIRS Cardinality	Value Set	Element Name	CDC IG Usage	SAIRS Usage	Constraint
						Separator			
2	3	ST	[1..1]	[1..1]		Batch Encoding Characters	R	R	The BHS.2 field shall be ^~\&
3		HD	[0..1]	[0..1]		Batch Sending Application	O	O	SAIRS will ignore this field if it is included in the BHS segment.
4		HD	[0..1]	[0..1]		Batch Sending Facility	O	O	SAIRS will ignore this field if it is included in the BHS segment.
5		HD	[0..1]	[0..1]		Batch Receiving Application	O	O	SAIRS will ignore this field if it is included in the BHS segment.
6		HD	[0..1]	[0..1]		Batch Receiving Facility	O	O	SAIRS will ignore this field if it is included in the BHS segment.
7		TS	[0..1]	[0..1]		Batch Creation Date/Time	O	O	SAIRS will ignore this field if it is included in the BHS segment.
8	40	ST	[0..1]	[0..1]		Batch Security	O	O	SAIRS will ignore this field if it is included in the BHS segment.
9	20	ST	[0..1]	[0..1]		Batch Name/ID/Type	O	O	SAIRS will ignore this field if it is included in the BHS segment.
10	80	ST	[0..1]	[0..1]		Batch Comment	O	O	SAIRS will ignore this field if it is included in the BHS segment.
11	20	ST	[0..1]	[0..1]		Batch Control ID	O	O	SAIRS will ignore this field if it is included in the BHS segment.
12	20	ST	[0..1]	[0..1]		Reference Batch Control ID	O	O	SAIRS will ignore this field if it is included in the BHS segment.

Table 5-2: BHS (Batch Header) Segment Definition

BTS – Batch Trailer Segment

SAIRS is capable of processing messages batch VXU messages from an external system. (No other message types may be submitted in batch.) The use of a BTS is only expected when the batch has an accompanying BHS segment.

Note: Unless prior approval is received, batches should only be uploaded through the SAIRS user interface and not submitted through the web service.

Table 5-3 lists the fields that are part of the BTS segment.

SEQ	LEN	Data Type	CDC IG Cardinality	SAIRS Cardinality	Value Set	Element Name	CDC IG Usage	SAIRS Usage	Constraint
1	10	ST	[0..1]	[0..1]		Batch Message Count	O	O	SAIRS will ignore this field if it is included in the BTS segment.
2	80	ST	[0..1]	[0..1]		Batch Comment	O	O	SAIRS will ignore this field if it is included in the BTS segment.
3	100	NM	[0..1]	[0..1]		Batch Totals	O	O	SAIRS will ignore this field if it is included in the BTS segment.

Table 5-3: BTS (Batch Trailer) Segment Definition

DSC – Continuation Pointer Segment

This segment not supported by this HL7 interface.

ERR – Error Segment

Table 5-4 lists the fields that are part of the ERR segment.

SEQ	LEN	Data Type	CDC IG Cardinality	SAIRS Cardinality	Value Set	Element Name	CDC IG Usage	SAIRS Usage	Constraint
1		ELD	[0..0]	[0..0]		Error Code and Location	X	X	Not supported for Version 2.5 and above
2	18	ERL	[0..1]	[0..1]		Error Location	RE	RE	This Guide does not support repeat of this field. It assumes that each error will be contained in one ERR segment. If the same error occurs more than once, there will be on ERR for each. If an error involves the entire message (e.g., the message is not parse-able) then location has not meaning. In this case, the field is left empty.
3		CWE	[1..1]	[1..1]	0357	HL7 Error Code	R	R	
4	2	ID	[1..1]	[1..1]	0516	Severity	R	R	
5		CWE	[0..1]	[0..0]	0533	Application Error Code	O	X	SAIRS will not populate this field in any outgoing messages with an ERR segment.
6	80	ST	[0..1]	[0..1]		Application Error Parameter	O	R	SAIRS will indicate the specific error or warning message in this field.

SEQ	LEN	Data Type	CDC IG Cardinality	SAIRS Cardinality	Value Set	Element Name	CDC IG Usage	SAIRS Usage	Constraint
7	2048	TX	[0..1]	[0..0]		Diagnostic Information	O	X	SAIRS will populate this field with the full error exceeds 80 characters.
8	250	TX	[0..1]	[0..0]		User Message	O	X	SAIRS will not populate this field in any outgoing messages with an ERR segment.
9	20	IS	[0..1]	[0..0]	0517	Inform Person Indicator	O	X	SAIRS will not populate this field in any outgoing messages with an ERR segment.
10		CWE	[0..1]	[0..0]	0518	Override Type	O	X	SAIRS will not populate this field in any outgoing messages with an ERR segment.
11		CWE	[0..1]	[0..0]	0519	Override Reason Code	O	X	SAIRS will not populate this field in any outgoing messages with an ERR segment.
12		XTN	[0..1]	[0..0]		Help Desk Contact Point	O	X	SAIRS will not populate this field in any outgoing messages with an ERR segment.

Table 5-4: ERR (Error) Segment Definition

EVN – Event Type Segment

This segment not supported by this HL7 interface.

FHS – File Header Segment

SAIRS is capable of processing messages batch VXU messages from an external system. (No other message types may be submitted in batch.) The use of a FHS is optional for these batches.

Note: Unless prior approval is received, batches should only be uploaded through the SAIRS user interface and not submitted through the web service.

Table 5-5 lists the fields that are part of the FHS segment.

SEQ	LEN	Data Type	CDC IG Cardinality	SAIRS Cardinality	Value Set	Element Name	CDC IG Usage	SAIRS Usage	Constraint
1	1	ST	[1..1]	[1..1]		File Field	R	R	The FHS.1 field shall be

SEQ	LEN	Data Type	CDC IG Cardinality	SAIRS Cardinality	Value Set	Element Name	CDC IG Usage	SAIRS Usage	Constraint
						Separator			
2	4	ST	[1..1]	[1..1]		File Encoding Characters	R	R	The FHS.2 field shall be ^~\&
3		HD	[0..1]	[0..1]		File Sending Application	O	O	SAIRS will ignore this field if it is included in the FHS segment.
4		HD	[0..1]	[0..1]		File Sending Facility	O	O	SAIRS will ignore this field if it is included in the FHS segment.
5		HD	[0..1]	[0..1]		File Receiving Application	O	O	SAIRS will ignore this field if it is included in the FHS segment.
6		HD	[0..1]	[0..1]		File Receiving Facility	O	O	SAIRS will ignore this field if it is included in the FHS segment.
7		TS	[0..1]	[0..1]		File Creation Date/Time	O	O	SAIRS will ignore this field if it is included in the FHS segment.
8	40	ST	[0..1]	[0..1]		File Security	O	O	SAIRS will ignore this field if it is included in the FHS segment.
9	20	ST	[0..1]	[0..1]		File Name/ID	O	O	SAIRS will ignore this field if it is included in the FHS segment.
10	80	ST	[0..1]	[0..1]		File Header Comment	O	O	SAIRS will ignore this field if it is included in the FHS segment.
11	20	ST	[0..1]	[0..1]		File Control ID	O	O	SAIRS will ignore this field if it is included in the FHS segment.
12	20	ST	[0..1]	[0..1]		Reference File Control ID	O	O	SAIRS will ignore this field if it is included in the FHS segment.

Table 5-5: FHS (File Header) Segment Definition

FTS – File Trailer Segment

SAIRS is capable of processing messages batch VXU messages from an external system. (No other message types may be submitted in batch.) The use of a FTS is only expected when the batch has an accompanying FHS segment.

Note: Unless prior approval is received, batches should only be uploaded through the SAIRS user interface and not submitted through the web service.

Table 5-6 lists the fields that are part of the FTS segment.

SEQ	LEN	Data Type	CDC IG Cardinality	SAIRS Cardinality	Value Set	Element Name	CDC IG Usage	SAIRS Usage	Constraint
1	10	NM	[0..1]	[0..1]		File Batch Count	O	O	SAIRS will ignore this field if it is included in the FTS segment.
2	80	ST	[0..1]	[0..1]		File Trailer Comment	O	O	SAIRS will ignore this field if it is included in the FTS segment.

Table 5-6: FTS (File Trailer) Segment Definition

GT1 – Guarantor Segment

This segment not supported by this HL7 interface.

IN1 – Insurance Segment

This segment not supported by this HL7 interface.

IN2 – Insurance Segment

This segment not supported by this HL7 interface.

IN3 – Insurance Segment

This segment not supported by this HL7 interface.

MSA – Message Acknowledgement Segment

Table 5-7 lists the fields that are part of the MSA segment.

SEQ	LEN	Data Type	CDC IG Cardinality	SAIRS Cardinality	Value Set	Element Name	CDC IG Usage	SAIRS Usage	Constraint
1	2	ID	[1..1]	[1..1]	0008	Acknowledgement	R	R	SAIRS only supports the Original Mode.
2	20	ST	[1..1]	[1..1]		Message Control ID	R	R	SAIRS will populate this field with the contents of the MSH-10 of the incoming message.
3	80	ST	[0..1]	[0..0]		Text Message	O	X	SAIRS will not populate this field in any outgoing messages with an MSA segment.
4	15	NM	[0..1]	[0..0]		Expected Sequence Number	O	X	SAIRS will not populate this field in any outgoing messages with an MSA segment.

SEQ	LEN	Data Type	CDC IG Cardinality	SAIRS Cardinality	Value Set	Element Name	CDC IG Usage	SAIRS Usage	Constraint
5			[0..1]	[0..0]		Delayed Acknowledgment Type	O	X	SAIRS will not populate this field in any outgoing messages with an MSA segment.
6		CE	[0..0]	[0..0]	0357	Error Condition	X	X	SAIRS will not populate this field in any outgoing messages with an MSA segment.

Table 5-7: MSA (Message Acknowledgement) Segment Definition

MSH – Message Header Segment

Table 5-8 lists the fields that are part of the MSH segment.

SEQ	LEN	Data Type	CDC IG Cardinality	SAIRS Cardinality	Value Set	Element Name	CDC IG Usage	SAIRS Usage	Constraint
1	1	ST	[1..1]	[1..1]		Field Separator	R	R	The MSH-1 field shall be For incoming messages, any other values in this field will result in the message being rejected.
2	4	ST	[1..1]	[1..1]		Encoding Characters	R	R	The MSH-2 field shall be ^~\& For incoming messages, any other values in this field will result in the message being rejected.
3		HD	[0..1]	[0..1]	0361	Sending Application	RE	RE	SAIRS will not use the value supplied in this field when processing the incoming message. SAIRS will include the Registry System Name and identifier in this field for all outgoing messages.
4		HD	[0..1]	[1..1]	0362	Sending Facility	RE	R	SAIRS requires a valid Sending Facility code in every incoming message. Any message not containing a valid value will be rejected. Contact the SAIRS Help Desk for assistance in obtaining a Sending Facility code.

SEQ	LEN	Data Type	CDC IG Cardinality	SAIRS Cardinality	Value Set	Element Name	CDC IG Usage	SAIRS Usage	Constraint
									SAIRS will include SA0000 as the value in this field for all outgoing messages.
5		HD	[0..1]	[0..1]	0361	Receiving Application	RE	RE	SAIRS will not use the value supplied in this field when processing the incoming message. SAIRS will always set this to the value in the "Sending Application" field from the corresponding QBP message for outgoing messages.
6		HD	[0..1]	[1..1]	0362	Receiving Facility	RE	R	SAIRS requires a valid Receiving Facility code in every incoming message. Any message not containing a valid value will be rejected. Since SAIRS covers the City of San Antonio, the only appropriate Receiving Facility code is: SA0000 SAIRS will always set this to the value in the "Sending Facility" field from the corresponding QBP message for outgoing messages.
7		TS	[1..1]	[1..1]		Date/Time Of Message	R	R	The degree of precision must be at least to the minute, and the time zone must be included (format YYYYMMDDHHMM[SS[.S[S[S[S]]]]]+/-ZZZZ). If an invalid value (i.e., improperly formatted or in the future) is supplied in an incoming message, SAIRS will return an error but will continue to process the incoming message. SAIRS will always set this to the system

SEQ	LEN	Data Type	CDC IG Cardinality	SAIRS Cardinality	Value Set	Element Name	CDC IG Usage	SAIRS Usage	Constraint
									date/time the message was created for outgoing messages.
8	40	ST	[0..1]	[0..0]		Security	O	X	SAIRS will ignore this field if it is included in the MSH segment of any incoming messages. SAIRS will not populate this field in any outgoing.
9	15	MSG	[1..1]	[1..1]		Message Type	R	R	SAIRS will accept the following message types: <ul style="list-style-type: none"> • VXU^V04 • QBP^Q11 Any other value in this field will result in the incoming message being rejected. SAIRS will return messages of the following message types: <ul style="list-style-type: none"> • RSP^K11 • ACK^
10	20	ST	[1..1]	[1..1]		Message Control ID	R	R	For incoming messages, the value should be unique within the scope of the sending facility and sending application, and the date (YYYYMMDD) portion of the message date. If this field is missing, the incoming message will be rejected. For outgoing messages, SAIRS will always put a value of YYYYMMDDXX999999 in this field. This value can be interpreted as: <ul style="list-style-type: none"> • YYYYMMDD = current system date when response was created • XX = set to the 2 character abbreviation for City of San Antonio • 999999 = sequential number assigned to each HL7 message sent

SEQ	LEN	Data Type	CDC IG Cardinality	SAIRS Cardinality	Value Set	Element Name	CDC IG Usage	SAIRS Usage	Constraint
									In addition, SAIRS will populate the MSA-2 field of any response message with the value in this field supplied by the sending application in the incoming message.
11	3	PT	[1..1]	[1..1]	0103	Processing ID	R	R	<p>Any incoming message not containing a valid value in the first component will be rejected.</p> <p>For outgoing messages, SAIRS will populate this field as follows:</p> <ul style="list-style-type: none"> • “P” will be in the first component of this field when the message is being processed by the production system. • “T” will be in the first component of this field when the message is being processed by a test/training system. • The second component will always be empty
12		VID	[1..1]	[1..1]		Version ID	R	R	<p>Any incoming message being processed through the SAIRS interface supported by this IG must specify 2.5.1 as the version. All other values will cause the message to be rejected.</p> <p>All response messages will specify 2.5.1 as the version.</p> <p>If you would like to utilize the HL7 2.3.1 interface for SAIRS, contact the Help Desk for the necessary information.</p>
13	15	NM	[0..1]	[0..0]		Sequence Number	O	X	<p>SAIRS will ignore this field if it is included in the MSH segment of any incoming messages.</p> <p>SAIRS will not populate this field in any outgoing messages.</p>
14	180	ST	[0..1]	[0..0]		Continuation	O	X	SAIRS will ignore this field if it is included

SEQ	LEN	Data Type	CDC IG Cardinality	SAIRS Cardinality	Value Set	Element Name	CDC IG Usage	SAIRS Usage	Constraint
						Pointer			in the MSH segment of any incoming messages. SAIRS will not populate this field in any outgoing messages.
15	2	ID	[0..1]	[0..1]	0155	Accept Acknowledgement Type	RE	RE	SAIRS will ignore any value supplied in this field in an incoming message and will process it using the original acknowledgement mode (i.e., an acknowledgement will be returned to the external system once the incoming message has been processed). All outgoing messages will contain 'NE' in this field.
16	2	ID	[0..1]	[0..1]	0155	Application Acknowledgment Type	RE	RE	SAIRS will ignore any value supplied in this field in an incoming message and will process it using the original acknowledgement mode (i.e., an acknowledgement will be returned to the external system once the incoming message has been processed). All outgoing messages will contain 'NE' in this field. (SAIRS does not process any responses to messages it sends.)
17	3	ID	[0..1]	[0..0]	0399	Country Code	O	X	SAIRS expects all incoming messages will originate in the USA or a related territory. It will ignore any value supplied in this field. This field will be left empty for all outgoing messages.
18	16	ID	[0..1]	[0..0]	0211	Character Set	O	X	SAIRS expects all incoming messages will use the ASCII character set. It will ignore any value supplied in this field and will process the message using the ASCII

SEQ	LEN	Data Type	CDC IG Cardinality	SAIRS Cardinality	Value Set	Element Name	CDC IG Usage	SAIRS Usage	Constraint
									character set. This field will be left empty for all outgoing messages.
19		CE	[0..1]	[0..0]		Principal Language Of Message	O	X	SAIRS expects all messages will use English as the principal language. It will ignore any other value in this field and will process the message without using alternate character sets. This field will be left empty for all outgoing messages.
20	20	ID	[0..1]	[0..0]	0356	Alternate Character Set Handling Scheme	O	X	SAIRS expects all messages to not use character switching. It will ignore any other value in this field and will process the message without using alternate character sets. This field will be left empty for all outgoing messages.
21		EI	[0..*]	[0..1]		Message Profile Identifier	O	O	SAIRS expects the following values for all incoming messages: <ul style="list-style-type: none"> • Z34^CDCPHINVS is assumed for all incoming QBP messages. • Value is ignored for all other incoming message types and will be processed without applying a message profile. All outgoing messages will be coded as follows: <ul style="list-style-type: none"> • Z32^CDCPHINVS will be used for all RSP messages containing a single patient record with full immunization history • Z31^CDCPHINVS will be used for all RSP messages containing one or

SEQ	LEN	Data Type	CDC IG Cardinality	SAIRS Cardinality	Value Set	Element Name	CDC IG Usage	SAIRS Usage	Constraint
									more lower confidence matching records • Empty for all other outgoing message types.

Table 5-8: MSH (Message Header) Segment Definition

NK1 – Next of Kin Segment

NK1 entries are processed into SAIRS as Patient Contacts. Table 5-9 lists the fields that are part of the NK1 segment.

SEQ	LEN	Data Type	CDC IG Cardinality	SAIRS Cardinality	Value Set	Element Name	CDC IG Usage	SAIRS Usage	Constraint
1	4	SI	[1..1]	[1..1]		Set ID – NK1	R	R	
2		XPN	[1..*]	[1..2]		Name	R	R	The first instance in the incoming message is the legal name and is required. The second instance is optional and may contain the Maiden name of the person. However, Mother's Maiden Name should be passed in via PID-6. For outgoing messages, the contact's name will be included with a type of 'L'. No additional names will be included.
3		CE	[1..1]	[1..1]	0063	Relationship	R	R	
4		XAD	[0..*]	[0..*]		Address	RE	RE	SAIRS does not track addresses for patient contacts. It will ignore all values in this field in incoming messages. For outgoing messages, this field will always be empty.
5		XTN	[0..*]	[0..2]		Phone Number	RE	RE	SAIRS will only process Telecommunication Code Types of PRN, ORN, and WPN for NK1 segments in incoming messages. All other types will be ignored. If an invalid value is supplied, SAIRS will return an error but will continue to process the incoming

SEQ	LEN	Data Type	CDC IG Cardinality	SAIRS Cardinality	Value Set	Element Name	CDC IG Usage	SAIRS Usage	Constraint
									message. For outgoing messages, the following types will be included (when non-NULL) in the Registry (as available): PRN, WPN, ORN.
6		XTN	[0..*]	[0..1]		Business Phone Number	O	O	If the WPN phone number type is not sent in NK1-5 in the incoming message, then it can optionally be included here. If an invalid value is supplied, SAIRS will return an error but will continue to process the incoming message. This field will be empty in all outgoing messages.
7		CE	[0..1]	[0..0]	0131	Contact Role	O	X	SAIRS will ignore this field if it is included in the NK1 segment of any incoming messages. SAIRS will not populate this field in any outgoing messages with a NK1 segment.
8	8	DT	[0..1]	[0..0]		Start Date	O	X	SAIRS will ignore this field if it is included in the NK1 segment of any incoming messages. SAIRS will not populate this field in any outgoing messages with a NK1 segment.
9	8	DT	[0..1]	[0..0]		End Date	O	X	SAIRS will ignore this field if it is included in the NK1 segment of any incoming messages. SAIRS will not populate this field in any outgoing messages with a NK1 segment.
10	60	ST	[0..1]	[0..0]		Next of Kin / Associated Parties Job Title	O	X	SAIRS will ignore this field if it is included in the NK1 segment of any incoming messages.

SEQ	LEN	Data Type	CDC IG Cardinality	SAIRS Cardinality	Value Set	Element Name	CDC IG Usage	SAIRS Usage	Constraint
									SAIRS will not populate this field in any outgoing messages with a NK1 segment.
11		JCC	[0..1]	[0..0]	0327/ 0328	Next of Kin / Associated Parties Job Code/Class	O	X	SAIRS will ignore this field if it is included in the NK1 segment of any incoming messages. SAIRS will not populate this field in any outgoing messages with a NK1 segment.
12		CX	[0..1]	[0..0]		Next of Kin / Associated Parties Employee Number	O	X	SAIRS will ignore this field if it is included in the NK1 segment of any incoming messages. SAIRS will not populate this field in any outgoing messages with a NK1 segment.
13		XON	[0..1]	[0..0]		Organization Name - NK1	O	X	SAIRS will ignore this field if it is included in the NK1 segment of any incoming messages. SAIRS will not populate this field in any outgoing messages with a NK1 segment.
14		CE	[0..1]	[0..0]	0002	Marital Status	O	X	SAIRS will ignore this field if it is included in the NK1 segment of any incoming messages. SAIRS will not populate this field in any outgoing messages with a NK1 segment.
15	1	IS	[0..1]	[0..0]	0001	Administrative Sex	O	X	SAIRS will ignore this field if it is included in the NK1 segment of any incoming messages. SAIRS will not populate this field in any outgoing messages with a NK1 segment.
16		TS	[0..1]	[0..0]		Date/Time of Birth	O	X	SAIRS will ignore this field if it is included in the NK1 segment of any incoming messages. SAIRS will not populate this field in any

SEQ	LEN	Data Type	CDC IG Cardinality	SAIRS Cardinality	Value Set	Element Name	CDC IG Usage	SAIRS Usage	Constraint
									outgoing messages with a NK1 segment.
17	2	IS	[0..1]	[0..0]	0223	Living Dependency	O	X	SAIRS will ignore this field if it is included in the NK1 segment of any incoming messages. SAIRS will not populate this field in any outgoing messages with a NK1 segment.
18	2	IS	[0..1]	[0..0]	0009	Ambulatory Status	O	X	SAIRS will ignore this field if it is included in the NK1 segment of any incoming messages. SAIRS will not populate this field in any outgoing messages with a NK1 segment.
19		CE	[0..1]	[0..0]	0171	Citizenship	O	X	SAIRS will ignore this field if it is included in the NK1 segment of any incoming messages. SAIRS will not populate this field in any outgoing messages with a NK1 segment.
20		CE	[0..1]	[0..0]	ISO0639	Primary Language	O	X	SAIRS will ignore this field if it is included in the NK1 segment of any incoming messages. SAIRS will not populate this field in any outgoing messages with a NK1 segment.
21	2	IS	[0..1]	[0..0]	0220	Living Arrangement	O	X	SAIRS will ignore this field if it is included in the NK1 segment of any incoming messages. SAIRS will not populate this field in any outgoing messages with a NK1 segment.
22		CE	[0..1]	[0..0]	0215	Publicity Code	O	X	SAIRS will ignore this field if it is included in the NK1 segment of any incoming messages. SAIRS will not populate this field in any outgoing messages with a NK1 segment.

SEQ	LEN	Data Type	CDC IG Cardinality	SAIRS Cardinality	Value Set	Element Name	CDC IG Usage	SAIRS Usage	Constraint
23	1	ID	[0..1]	[0..0]	0136	Protection Indicator	O	X	SAIRS will ignore this field if it is included in the NK1 segment of any incoming messages. SAIRS will not populate this field in any outgoing messages with a NK1 segment.
24	2	IS	[0..1]	[0..0]	0231	Student Indicator	O	X	SAIRS will ignore this field if it is included in the NK1 segment of any incoming messages. SAIRS will not populate this field in any outgoing messages with a NK1 segment.
25		CE	[0..1]	[0..0]	0006	Religion	O	X	SAIRS will ignore this field if it is included in the NK1 segment of any incoming messages. SAIRS will not populate this field in any outgoing messages with a NK1 segment.
26		XPN	[0..1]	[0..0]		Mother's Maiden Name	O	X	SAIRS will ignore this field if it is included in the NK1 segment of any incoming messages. SAIRS will not populate this field in any outgoing messages with a NK1 segment.
27		CE	[0..1]	[0..0]	0212	Nationality	O	X	SAIRS will ignore this field if it is included in the NK1 segment of any incoming messages. SAIRS will not populate this field in any outgoing messages with a NK1 segment.
28		CE	[0..1]	[0..0]	0189	Ethnic Group	O	X	SAIRS will ignore this field if it is included in the NK1 segment of any incoming messages. SAIRS will not populate this field in any outgoing messages with a NK1 segment.
29		CE	[0..1]	[0..1]	0222	Contact Reason	O	O	SAIRS will accept a locally-defined value

SEQ	LEN	Data Type	CDC IG Cardinality	SAIRS Cardinality	Value Set	Element Name	CDC IG Usage	SAIRS Usage	Constraint
									<p>of "PR" (Primary) in this field in an incoming message to indicate that this contact should be marked as the Primary Contact in the Registry. (Any other contacts marked as Primary will no longer have this designation.) All other values will be ignored in this field.</p> <p>For outgoing messages, if a contact is marked in the Registry as being the Primary Contact, 'PR' will be included in this field. Otherwise, the field will be empty.</p>
30		XPN	[0..1]	[0..0]		Contact Person's Name	O	X	<p>SAIRS will ignore this field if it is included in the NK1 segment of any incoming messages.</p> <p>SAIRS will not populate this field in any outgoing messages with a NK1 segment.</p>
31		XTN	[0..1]	[0..0]		Contact Person's Telephone Number	O	X	<p>SAIRS will ignore this field if it is included in the NK1 segment of any incoming messages.</p> <p>SAIRS will not populate this field in any outgoing messages with a NK1 segment.</p>
32		XAD	[0..1]	[0..0]		Contact Person's Address	O	X	<p>SAIRS will ignore this field if it is included in the NK1 segment of any incoming messages.</p> <p>SAIRS will not populate this field in any outgoing messages with a NK1 segment.</p>
33		CX	[0..1]	[0..0]		Next of Kin/Associated Party's Identifiers	O	X	<p>SAIRS will ignore this field if it is included in the NK1 segment of any incoming messages.</p> <p>SAIRS will not populate this field in any outgoing messages with a NK1 segment.</p>

SEQ	LEN	Data Type	CDC IG Cardinality	SAIRS Cardinality	Value Set	Element Name	CDC IG Usage	SAIRS Usage	Constraint
34	2	IS	[0..1]	[0..0]	0311	Job Status	O	X	SAIRS will ignore this field if it is included in the NK1 segment of any incoming messages. SAIRS will not populate this field in any outgoing messages with a NK1 segment.
35		CE	[0..1]	[0..0]	0005	Race	O	X	SAIRS will ignore this field if it is included in the NK1 segment of any incoming messages. SAIRS will not populate this field in any outgoing messages with a NK1 segment.
36	2	IS	[0..1]	[0..0]	0295	Handicap	O	X	SAIRS will ignore this field if it is included in the NK1 segment of any incoming messages. SAIRS will not populate this field in any outgoing messages with a NK1 segment.
37	16	ST	[0..1]	[0..0]		Contact Person Social Security Number	O	X	SAIRS will ignore this field if it is included in the NK1 segment of any incoming messages. SAIRS will not populate this field in any outgoing messages with a NK1 segment.
38		ST	[0..1]	[0..0]		Next of Kin Birth Place	O	X	SAIRS will ignore this field if it is included in the NK1 segment of any incoming messages. SAIRS will not populate this field in any outgoing messages with a NK1 segment.
39	2	IS	[0..1]	[0..0]	0099	VIP Indicator	O	X	SAIRS will ignore this field if it is included in the NK1 segment of any incoming messages. SAIRS will not populate this field in any outgoing messages with a NK1 segment.

Table 5-9: NK (Next of Kin) Segment Definition

NTE – Note Segment

Table 5-10 lists the fields that are part of the NTE segment.

SEQ	LEN	Data Type	CDC IG Cardinality	SAIRS Cardinality	Value Set	Element Name	CDC IG Usage	SAIRS Usage	Constraint
1	4	SI	[0..1]	[0..1]		Set ID – NTE	O	O	
2	8	ID	[0..1]	[0..0]	0105	Source of Comment	O	X	SAIRS will ignore this field if it is included in the PD1 segment of any incoming messages. SAIRS will not populate this field in any outgoing messages with a PD1 segment.
3		FT	[1..1]	[1..1]		Comment	R	R	SAIRS will only include a NTE segment in an outgoing message whenever there is an OBX segment containing an indication of an adverse reaction (in which case it will contain the appropriate reaction).
4		CE	[0..1]	[0..0]	0364	Comment Type	O	X	SAIRS will ignore this field if it is included in the NK1 segment of any incoming messages. SAIRS will not populate this field in any outgoing messages with a NK1 segment.

Table 5-10: NTE (Note) Segment Definition

OBX – Observation Result Segment

Table 5-11 lists the fields that are part of the OBX segment.

SEQ	LEN	Data Type	CDC IG Cardinality	SAIRS Cardinality	Value Set	Element Name	CDC IG Usage	SAIRS Usage	Constraint
1	4	SI	[1..1]	[1..1]		Set ID – OBX	R	R	
2	2	ID	[1..1]	[1..1]	0125	Value Type	R	R	CE, NM, ST, DT, or TS The specific type indicated must match with the value specified in OBX-3
3		CE	[1..1]	[1..1]		Observation Identifier	R	R	This indicates what this observation refers to. It poses the question that is answered by OBX-5.

SEQ	LEN	Data Type	CDC IG Cardinality	SAIRS Cardinality	Value Set	Element Name	CDC IG Usage	SAIRS Usage	Constraint
									<p>SAIRS will accept the following data (with indicated LOINC codes) in incoming messages:</p> <ul style="list-style-type: none"> o 1648-5^Tuberculosis Reaction^LN o 29768-9^Date Vaccine Information Statement Published^LN o 29769-7^Date Vaccine Information Statement Presented^LN o 30948-4^Vaccination Adverse event and treatment, if any^LN o 30946-8^Vaccination contraindication effective date^LN o 30944-3^Vaccination temporary contraindication expiration date^LN o 30945-0^Vaccination contraindication^LN o 8339-4^Body Weight at Birth^NM <p>OBX segments with any other LOINC codes values will be ignored.</p> <p>SAIRS will include the following data (with indicated LOINC codes) in outgoing messages (as available):</p> <ul style="list-style-type: none"> o 1648-5^Tuberculosis Reaction^LN o 29768-9^Date Vaccine Information Statement Published^LN o 29769-7^Date Vaccine Information Statement Presented^LN o 30948-4^Vaccination Adverse event and treatment, if any^LN o 30946-8^Vaccination contraindication effective date^LN o 30944-3^Vaccination temporary contraindication expiration date^LN o 30945-0^Vaccination contraindication^LN o 30979-9^Vaccines due next^LN

SEQ	LEN	Data Type	CDC IG Cardinality	SAIRS Cardinality	Value Set	Element Name	CDC IG Usage	SAIRS Usage	Constraint
									<ul style="list-style-type: none"> o 30980-7^Date vaccine due^LN o 8339-4^Body Weight at Birth^NM
4	20	ST	[1..1]	[1..1]		Observation Sub-ID	RE	RE	
5		variable ¹	[1..1]	[1..1]		Observation Value	R	R	This is the observation value and answers the question posed by OBX-3
6		CE	[0..1]	[0..1]		Units	CE	CE	SAIRS will ignore any value specified in this field in incoming messages. For outgoing messages, this field will always be empty.
7	60	ST	[0..1]	[0..0]		References Range	O	X	SAIRS will ignore this field if it is included in the OBX segment of any incoming messages. SAIRS will not populate this field in any outgoing messages with an OBX segment.
8	5	IS	[0..1]	[0..0]	0078	Abnormal Flags	O	X	SAIRS will ignore this field if it is included in the OBX segment of any incoming messages. SAIRS will not populate this field in any outgoing messages with an OBX segment.
9	5	NM	[0..1]	[0..0]		Probability	O	X	SAIRS will ignore this field if it is included in the OBX segment of any incoming messages. SAIRS will not populate this field in any outgoing messages with an OBX segment.
10	2	ID	[0..1]	[0..0]	0080	Nature of Abnormal Test	O	X	SAIRS will ignore this field if it is included in the OBX segment of any incoming

¹ The length of the observation field is variable, depending upon value type. See *OBX-2 value type*.

SEQ	LEN	Data Type	CDC IG Cardinality	SAIRS Cardinality	Value Set	Element Name	CDC IG Usage	SAIRS Usage	Constraint
									messages. SAIRS will not populate this field in any outgoing messages with an OBX segment.
11	1	ID	[1..1]	[1..1]	0085	Observation Result Status	R	R	SAIRS will ignore any value specified in this field in an incoming message and will process all segments with a value of 'F'. For outgoing messages, this field will be populated with a value of 'F'.
12		TS	[0..1]	[0..0]		Effective Date of Reference Range Values	O	X	SAIRS will ignore this field if it is included in the OBX segment of any incoming messages. SAIRS will not populate this field in any outgoing messages with an OBX segment.
13	20	ST	[0..1]	[0..0]		User Defined Access Checks	O	X	SAIRS will ignore this field if it is included in the OBX segment of any incoming messages. SAIRS will not populate this field in any outgoing messages with an OBX segment.
14		TS	[1..1]	[1..1]		Date/Time of the Observation	RE	RE	
15		CE	[0..1]	[0..0]		Producer's Reference	O	X	SAIRS will ignore this field if it is included in the OBX segment of any incoming messages. SAIRS will not populate this field in any outgoing messages with an OBX segment.
16		XCN	[0..1]	[0..0]		Responsible Observer	O	X	SAIRS will ignore this field if it is included in the OBX segment of any incoming messages.

SEQ	LEN	Data Type	CDC IG Cardinality	SAIRS Cardinality	Value Set	Element Name	CDC IG Usage	SAIRS Usage	Constraint
									SAIRS will not populate this field in any outgoing messages with an OBX segment.
17		CE	[0..1]	[0..0]		Observation Method	O	X	SAIRS will ignore this field if it is included in the OBX segment of any incoming messages. SAIRS will not populate this field in any outgoing messages with an OBX segment.
18		EI	[0..1]	[0..0]		Equipment Instance Identifier	O	X	SAIRS will ignore this field if it is included in the OBX segment of any incoming messages. SAIRS will not populate this field in any outgoing messages with an OBX segment.
19		TS	[0..1]	[0..0]		Date/Time of the Analysis	O	X	SAIRS will ignore this field if it is included in the OBX segment of any incoming messages. SAIRS will not populate this field in any outgoing messages with an OBX segment.
20			[0..1]	[0..0]		Reserved for harmonization with V2.6	O	X	SAIRS will ignore this field if it is included in the OBX segment of any incoming messages. SAIRS will not populate this field in any outgoing messages with an OBX segment.
21			[0..1]	[0..0]		Reserved for harmonization with V2.6	O	X	SAIRS will ignore this field if it is included in the OBX segment of any incoming messages. SAIRS will not populate this field in any

SEQ	LEN	Data Type	CDC IG Cardinality	SAIRS Cardinality	Value Set	Element Name	CDC IG Usage	SAIRS Usage	Constraint
									outgoing messages with an OBX segment.
22			[0..1]	[0..0]		Reserved for harmonization with V2.6	O	X	SAIRS will ignore this field if it is included in the OBX segment of any incoming messages. SAIRS will not populate this field in any outgoing messages with an OBX segment.
23		XON	[0..1]	[0..0]		Performing Organization Name	O	X	SAIRS will ignore this field if it is included in the OBX segment of any incoming messages. SAIRS will not populate this field in any outgoing messages with an OBX segment.
24		XAD	[0..1]	[0..0]		Performing Organization Address	O	X	SAIRS will ignore this field if it is included in the OBX segment of any incoming messages. SAIRS will not populate this field in any outgoing messages with an OBX segment.
25		XCN	[0..1]	[0..0]		Performing Organization Medical Director	O	X	SAIRS will ignore this field if it is included in the OBX segment of any incoming messages. SAIRS will not populate this field in any outgoing messages with an OBX segment.

Table 5-11: OBX (Observation Result) Segment Definition

ORC – Order Request Segment

Table 5-12 lists the fields that are part of the ORC segment.

SEQ	LEN	Data Type	CDC IG Cardinality	SAIRS Cardinality	Value Set	Element Name	CDC IG Usage	SAIRS Usage	Constraint
1	2	ID	[1..1]		0119	Order Control	R		
2		EI	[0..1]	[0..1]		Placer Order Number	RE	RE	SAIRS does not track the Placer Order Number. It will ignore all values in this field in incoming messages. For outgoing messages, this field will always be empty.
3		EI	[1..1]	[1..1]		Filler Order Number	R	R	The identifier including in the incoming message will be stored off with immunization associated with this vaccination. For outgoing messages, the internal patient vaccination ID is included in this field.
4		EI	[0..1]	[0..0]		Placer Group Number	O	X	SAIRS will ignore this field if it is included in the ORC segment of any incoming messages. SAIRS will not populate this field in any outgoing messages with an ORC segment.
5	2	ID	[0..1]	[0..0]	0038	Order Status	O	X	SAIRS will ignore this field if it is included in the ORC segment of any incoming messages. SAIRS will not populate this field in any outgoing messages with an ORC segment.
6	1	ID	[0..1]	[0..0]	0121	Response Flag	O	X	SAIRS will ignore this field if it is included in the ORC segment of any incoming messages. SAIRS will not populate this field in any outgoing messages with an ORC segment.
7		TQ	[0..0]	[0..0]		Quantity/Timing	X	X	SAIRS will ignore this field if it is included

SEQ	LEN	Data Type	CDC IG Cardinality	SAIRS Cardinality	Value Set	Element Name	CDC IG Usage	SAIRS Usage	Constraint
									in the ORC segment of any incoming messages. SAIRS will not populate this field in any outgoing messages with an ORC segment.
8		EIP	[0..1]	[0..0]		Parent	O	X	SAIRS will ignore this field if it is included in the ORC segment of any incoming messages. SAIRS will not populate this field in any outgoing messages with an ORC segment.
9		TS	[0..1]	[0..0]		Date/Time of Transaction	O	X	SAIRS will ignore this field if it is included in the ORC segment of any incoming messages. SAIRS will not populate this field in any outgoing messages with an ORC segment.
10		XCN	[0..1]	[0..1]		Entered By	RE	RE	SAIRS does not track the person who enters an order. It will ignore any value in this field in an incoming message. This field will always be empty for an outgoing message.
11		XCN	[0..1]	[0..0]		Verified By	O	X	SAIRS will ignore this field if it is included in the ORC segment of any incoming messages. SAIRS will not populate this field in any outgoing messages with an ORC segment.
12		XCN	[0..1]	[0..1]		Ordering Provider	RE	RE	This shall be the provider ordering the immunization. It is expected to be empty if the immunization record is transcribed from a historical record.

SEQ	LEN	Data Type	CDC IG Cardinality	SAIRS Cardinality	Value Set	Element Name	CDC IG Usage	SAIRS Usage	Constraint
									<p>SAIRS will interpret the Unique ID (first component) of this field in the incoming message as the person's NPI (National Provider Identifier). If this matches a user within SAIRS associated with this clinic, then this user will be indicated in the Prescribed By field for the immunization. If a match cannot be found, SAIRS will return an error but will continue to process the incoming message.</p> <p>For outgoing messages, SAIRS will include the NPI as the Unique ID in this field of the person who prescribed the vaccine (if available).</p>
13		PL	[0..1]	[0..0]		Enterer's Location	O	X	<p>SAIRS will ignore this field if it is included in the ORC segment of any incoming messages.</p> <p>SAIRS will not populate this field in any outgoing messages with an ORC segment.</p>
14		XTN	[0..1]	[0..0]		Call Back Phone Number	O	X	<p>SAIRS will ignore this field if it is included in the ORC segment of any incoming messages.</p> <p>SAIRS will not populate this field in any outgoing messages with an ORC segment.</p>
15		TS	[0..1]	[0..0]		Order Effective Date/Time	O	X	<p>SAIRS will ignore this field if it is included in the ORC segment of any incoming messages.</p> <p>SAIRS will not populate this field in any outgoing messages with an ORC segment.</p>

SEQ	LEN	Data Type	CDC IG Cardinality	SAIRS Cardinality	Value Set	Element Name	CDC IG Usage	SAIRS Usage	Constraint
16		CE	[0..1]	[0..0]		Order Control Code Reason	O	X	SAIRS will ignore this field if it is included in the ORC segment of any incoming messages. SAIRS will not populate this field in any outgoing messages with an ORC segment.
17		CE	[0..1]	[0..0]		Entering Organization	O	X	SAIRS will ignore this field if it is included in the ORC segment of any incoming messages. SAIRS will not populate this field in any outgoing messages with an ORC segment.
18		CE	[0..1]	[0..0]		Entering Device	O	X	SAIRS will ignore this field if it is included in the ORC segment of any incoming messages. SAIRS will not populate this field in any outgoing messages with an ORC segment.
19		XCN	[0..1]	[0..0]		Action By	O	X	SAIRS will ignore this field if it is included in the ORC segment of any incoming messages. SAIRS will not populate this field in any outgoing messages with an ORC segment.
20		CE	[0..1]	[0..0]	0339	Advanced Beneficiary Notice Code	O	X	SAIRS will ignore this field if it is included in the ORC segment of any incoming messages. SAIRS will not populate this field in any outgoing messages with an ORC segment.
21		XON	[0..1]	[0..0]		Ordering Facility Name	O	X	SAIRS will ignore this field if it is included in the ORC segment of any incoming

SEQ	LEN	Data Type	CDC IG Cardinality	SAIRS Cardinality	Value Set	Element Name	CDC IG Usage	SAIRS Usage	Constraint
									messages. SAIRS will not populate this field in any outgoing messages with an ORC segment.
22		XAD	[0..1]	[0..0]		Ordering Facility Address	O	X	SAIRS will ignore this field if it is included in the ORC segment of any incoming messages. SAIRS will not populate this field in any outgoing messages with an ORC segment.
23		XTN	[0..1]	[0..0]		Ordering Facility Phone Number	O	X	SAIRS will ignore this field if it is included in the ORC segment of any incoming messages. SAIRS will not populate this field in any outgoing messages with an ORC segment.
24		XAD	[0..1]	[0..0]		Ordering Provider Address	O	X	SAIRS will ignore this field if it is included in the ORC segment of any incoming messages. SAIRS will not populate this field in any outgoing messages with an ORC segment.
25		CWE	[0..1]	[0..0]		Order Status Modifier	O	X	SAIRS will ignore this field if it is included in the ORC segment of any incoming messages. SAIRS will not populate this field in any outgoing messages with an ORC segment.
26		CWE	[0..1]	[0..0]	0552	Advanced Beneficiary Notice Override Reason	O	X	SAIRS will ignore this field if it is included in the ORC segment of any incoming messages.

SEQ	LEN	Data Type	CDC IG Cardinality	SAIRS Cardinality	Value Set	Element Name	CDC IG Usage	SAIRS Usage	Constraint
									SAIRS will not populate this field in any outgoing messages with an ORC segment.
27		TS	[0..1]	[0..0]		Filler's Expected Availability Date/Time	O	X	SAIRS will ignore this field if it is included in the ORC segment of any incoming messages. SAIRS will not populate this field in any outgoing messages with an ORC segment.
28		CWE	[0..1]	[0..0]	0177	Confidentiality Code	O	X	SAIRS will ignore this field if it is included in the ORC segment of any incoming messages. SAIRS will not populate this field in any outgoing messages with an ORC segment.
29		CWE	[0..1]	[0..0]	0482	Order Type	O	X	SAIRS will ignore this field if it is included in the ORC segment of any incoming messages. SAIRS will not populate this field in any outgoing messages with an ORC segment.
30		CNE	[0..1]	[0..0]	0483	Enterer Authorization Mode	O	X	SAIRS will ignore this field if it is included in the ORC segment of any incoming messages. SAIRS will not populate this field in any outgoing messages with an ORC segment.
31		CWE	[0..1]	[0..0]		Parent Universal Service Identifier	O	X	SAIRS will ignore this field if it is included in the ORC segment of any incoming messages. SAIRS will not populate this field in any outgoing messages with an ORC

SEQ	LEN	Data Type	CDC IG Cardinality	SAIRS Cardinality	Value Set	Element Name	CDC IG Usage	SAIRS Usage	Constraint
									segment.

Table 5-12: ORC (Order Request) Segment Definition

PD1 – Patient Demographic Segment

Table 5-13 lists the fields that are part of the PD1 segment.

SEQ	LEN	Data Type	CDC IG Cardinality	SAIRS Cardinality	Value Set	Element Name	CDC IG Usage	SAIRS Usage	Constraint
1	2	IS	[0..1]	[0..0]	0223	Living Dependency	O	X	SAIRS will ignore this field if it is included in the PD1 segment of any incoming messages. SAIRS will not populate this field in any outgoing messages with a PD1 segment.
2	2	IS	[0..1]	[0..0]	0220	Living Arrangement	O	X	SAIRS will ignore this field if it is included in the PD1 segment of any incoming messages. SAIRS will not populate this field in any outgoing messages with a PD1 segment.
3	250	XON	[0..1]	[0..0]		Patient Primary Facility	O	X	SAIRS will ignore this field if it is included in the PD1 segment of any incoming messages. SAIRS will not populate this field in any outgoing messages with a PD1 segment.
4	250	XCN	[0..1]	[0..0]		Patient Primary Care Provider Name & ID No.	O	X	SAIRS will ignore this field if it is included in the PD1 segment of any incoming messages. SAIRS will not populate this field in any outgoing messages with a PD1 segment.
5	2	IS	[0..1]	[0..0]	0231	Student Indicator	O	X	SAIRS will ignore this field if it is included in the PD1 segment of any incoming messages.

SEQ	LEN	Data Type	CDC IG Cardinality	SAIRS Cardinality	Value Set	Element Name	CDC IG Usage	SAIRS Usage	Constraint
									SAIRS will not populate this field in any outgoing messages with a PD1 segment.
6	2	IS	[0..1]	[0..0]	0295	Handicap	O	X	SAIRS will ignore this field if it is included in the PD1 segment of any incoming messages. SAIRS will not populate this field in any outgoing messages with a PD1 segment.
7	2	IS	[0..1]	[0..0]	0315	Living Will Code	O	X	SAIRS will ignore this field if it is included in the PD1 segment of any incoming messages. SAIRS will not populate this field in any outgoing messages with a PD1 segment.
8	2	IS	[0..1]	[0..0]	0316	Organ Donor Code	O	X	SAIRS will ignore this field if it is included in the PD1 segment of any incoming messages. SAIRS will not populate this field in any outgoing messages with a PD1 segment.
9	1	ID	[0..1]	[0..0]	0136	Separate Bill	O	X	SAIRS will ignore this field if it is included in the PD1 segment of any incoming messages. SAIRS will not populate this field in any outgoing messages with a PD1 segment.
10	250	CX	[0..1]	[0..0]		Duplicate Patient	O	X	SAIRS will ignore this field if it is included in the PD1 segment of any incoming messages. SAIRS will not populate this field in any outgoing messages with a PD1 segment.
11	250	CE	[0..1]	[0..1]	0215	Publicity Code	RE	RE	SAIRS will not use the value supplied in this field when processing the incoming message. SAIRS will leave this field empty for

SEQ	LEN	Data Type	CDC IG Cardinality	SAIRS Cardinality	Value Set	Element Name	CDC IG Usage	SAIRS Usage	Constraint
									outgoing messages.
12	1	ID	[0..1]	[0..1]	0136	Protection Indicator	RE	RE	<p>If the patient is 19 years of age or older <i>and</i> the value of this field is "Y", then SAIRS will not load any vaccination(s) included in the incoming message. (A note will be added to the patient's record indicating that a message was received via HL7 but was marked to be protected.) In all other cases, any vaccination(s) included in the incoming message will be loaded.</p> <p>If an invalid value is supplied, SAIRS will return an error but will continue to process the incoming message.</p> <p>This field will be empty in all outgoing messages.</p>
13	8	DT	[0..1]	[0..1]		Protection Indicator Effective Date	CE	CE	<p>If protection indicator is valued, then this field should be valued.</p> <p>SAIRS will ignore this field if it is included in the PD1 segment of any incoming messages.</p> <p>This field will be empty in all outgoing messages.</p>
14	250	XON	[0..1]	[0..0]		Place of Worship	O	X	<p>SAIRS will ignore this field if it is included in the PD1 segment of any incoming messages.</p> <p>SAIRS will not populate this field in any outgoing messages with a PD1 segment.</p>
15	250	CE	[0..1]	[0..0]	0435	Advance Directive Code	O	X	<p>SAIRS will ignore this field if it is included in the PD1 segment of any incoming messages.</p> <p>SAIRS will not populate this field in any</p>

SEQ	LEN	Data Type	CDC IG Cardinality	SAIRS Cardinality	Value Set	Element Name	CDC IG Usage	SAIRS Usage	Constraint
									outgoing messages with a PD1 segment.
16	1	IS	[0..1]	[0..1]	0441	Immunization Registry Status	RE	RE	<p>If an invalid value is supplied in the incoming message, SAIRS will return an error but will continue to process the incoming message.</p> <p>For outgoing messages, only Immunization Program enrollment status from SAIRS will be included. Program enrollment data for other programs will not be included.</p>
17	8	DT	[0..1]	[0..1]		Immunization Registry Status Effective Date	CE	CE	<p>If the registry status field is filled, then this should be valued.</p> <p>SAIRS will interpret the value in an incoming message as follows:</p> <ul style="list-style-type: none"> • For a status of A, the date will be interpreted as the date the patient was opened in the Immunization Program. • For a status of I, L, or M, the date will be interpreted as the date the patient was closed out of the Immunization Program. <p>If an invalid value is supplied in the incoming message, SAIRS will return an error but will continue to process the incoming message.</p> <p>SAIRS will populate this field in outgoing messages as follows:</p> <ul style="list-style-type: none"> • For a status of A, the date included will be the date the person was opened in the Immunization program. • For a status of me, L, or M, the date included will be the date the person was closed out of the Immunization

SEQ	LEN	Data Type	CDC IG Cardinality	SAIRS Cardinality	Value Set	Element Name	CDC IG Usage	SAIRS Usage	Constraint
									program.
18	8	DT	[0..1]	[0..1]		Publicity Code Effective Date	CE	CE	If the publicity code field is filled then this field should be valued. SAIRS will ignore this field if it is included in the PD1 segment of any incoming messages. SAIRS will leave this field empty for outgoing messages.
19	5	IS	[0..1]	[0..0]	0140	Military Branch	O	X	SAIRS will ignore this field if it is included in the PD1 segment of any incoming messages. SAIRS will not populate this field in any outgoing messages with a PD1 segment.
20	2	IS	[0..1]	[0..0]	0141	Military Rank/Grade	O	X	SAIRS will ignore this field if it is included in the PD1 segment of any incoming messages. SAIRS will not populate this field in any outgoing messages with a PD1 segment.
21	3	IS	[0..1]	[0..0]	0142	Military Status	O	X	SAIRS will ignore this field if it is included in the PD1 segment of any incoming messages. SAIRS will not populate this field in any outgoing messages with a PD1 segment.

Table 5-13: PD1 (Patient Demographic) Segment Definition

PID – Patient Identifier Segment

Table 5-14 lists the fields that are part of the PID segment.

SEQ	LEN	Data Type	CDC IG Cardinality	SAIRS Cardinality	Value Set	Element Name	CDC IG Usage	SAIRS Usage	Constraint
1	4	SI	[0..1]	[0..1]		Set ID - PID	RE	RE	

SEQ	LEN	Data Type	CDC IG Cardinality	SAIRS Cardinality	Value Set	Element Name	CDC IG Usage	SAIRS Usage	Constraint
2		CX	[0..0]	[0..0]		Patient ID	X	X	SAIRS will ignore this field if it is included in the PID segment of any incoming messages. SAIRS will not populate this field in any outgoing messages with a PID segment.
3		CX	[1..*]	[1..*]	0203	Patient Identifier List	R	R	Refer to Appendix A for a detailed list of the Identifier Types accepted in incoming messages. For outgoing messages, the only identifier types that will be included (when a non-NULL value exists in the Registry) are: MA, MC, MR, and SR
4		CX	[0..0]	[0..0]		Alternate Patient ID - 00106	X	X	SAIRS will ignore this field if it is included in the PID segment of any incoming messages. SAIRS will not populate this field in any outgoing messages with a PID segment.
5		XPN	[1..*]	[1..*]		Patient Name	R	R	The first repetition should be the patient's Legal Name. (In the case that this record contains an Identifier Type of 'BR' in PID-3, then this field will also be loaded into the patient's Birth Record name fields.) Up to one alias name may also be specified in this field. Note that in order to update the Birth Record name the Birth Record ID must be sent in the update. When the Birth Record ID is passed in it will try to populate the legal name into the Birth Record Name, if no legal name is passed in it will use the Birth Record Name passed in.

SEQ	LEN	Data Type	CDC IG Cardinality	SAIRS Cardinality	Value Set	Element Name	CDC IG Usage	SAIRS Usage	Constraint
									<p>No other name types should be submitted via this field. Refer to other fields in the PID segment for the proper location of other names for the patient.</p> <p>For outgoing messages, the patient's full name as it is entered in the Registry will be included as a type 'L'. The field will be repeated to include the patient's alias name with a type 'A' (when a non-NULL value is known in the Registry).</p>
6		XPN	[0..1]	[0..1]		Mother's Maiden Name	RE	RE	<p>SAIRS expects the Name Type component to be "M" if any value is supplied in the incoming message.</p> <p>For outgoing messages, patient's mother's maiden name will be included with a type 'M' (when a non-NULL value is known in the Registry).</p>
7		TS	[1..1]	[1..1]		Date/Time of Birth	R	R	<p>Must have month, day and year components.</p> <p>An invalid value in this field in an incoming message will result in the message being rejected.</p>
8	1	IS	[0..1]	[0..1]	0001	Administrative Sex	RE	RE	<p>If an invalid value is supplied in the incoming message, SAIRS will return an error but will continue to process the incoming message.</p>
9		XPN	[0..0]	[0..0]		Patient Alias	X	X	<p>SAIRS will ignore this field if it is included in the PID segment of any incoming messages.</p> <p>SAIRS will not populate this field in any outgoing messages with a PID segment.</p>
10		CE	[0..*]	[0..5]	0005	Race	RE	RE	<p>The first triplet is to be used for the alpha</p>

SEQ	LEN	Data Type	CDC IG Cardinality	SAIRS Cardinality	Value Set	Element Name	CDC IG Usage	SAIRS Usage	Constraint
									code. The second triplet of the CE data type for race (alternate identifier, alternate text, and name of alternate coding system) should be used for governmentally assigned numeric codes (####-#). Only the first 5 instances of this field in an incoming message will be retained in SAIRS. Any additional instances will be ignored. If an invalid value is supplied, SAIRS will return an error but will continue to process the incoming message. Outgoing messages will include the first and second triplet data as available.
11		XAD	[0..*]	[0..*]		Patient Address	RE	RE	The first repetition in an incoming message should be the primary address. If an invalid address is supplied, SAIRS will return an error but will continue to process the incoming message. For outgoing messages, the first instance of the field will be used to include the Mailing address (with a type of 'M'). The field will be repeated to include the Physical address when available (with a type of 'P').
12	4	IS	[0..0]	[0..0]	0289	County Code	X	X	County belongs in address field.
13		XTN	[0..*]	[0..*]		Phone Number - Home	RE	RE	The first instance in an incoming message shall be the primary phone number. Only one item is allowed per repetition. If an invalid value is supplied in the incoming message, SAIRS will return an error but will continue to process the incoming message.

SEQ	LEN	Data Type	CDC IG Cardinality	SAIRS Cardinality	Value Set	Element Name	CDC IG Usage	SAIRS Usage	Constraint
									For outgoing messages, the following types will be included (when non-NULL in the Registry): PRN, WPN, ORN, ASM, BPN, and NET
14		XTN	[0..*]	[0..1]		Phone Number - Business	O	O	If the WPN phone number type is not sent in PID-13 of the incoming message, then it can optionally be included here. If an invalid value is supplied, SAIRS will return an error but will continue to process the incoming message. This field will be empty in all outgoing messages.
15		CE	[0..1]	[0..1]	ISO0639	Primary Language	O	O	If an invalid value is supplied in the incoming message, SAIRS will return an error but will continue to process the incoming message.
16		CE	[0..1]	[0..0]	0002	Marital Status	O	X	SAIRS will ignore this field if it is included in the PID segment of any incoming messages. SAIRS will not populate this field in any outgoing messages with a PID segment.
17		CE	[0..1]	[0..0]	0006	Religion	O	X	SAIRS will ignore this field if it is included in the PID segment of any incoming messages. SAIRS will not populate this field in any outgoing messages with a PID segment.
18		CX	[0..1]	[0..0]		Patient Account Number	O	X	SAIRS will ignore this field if it is included in the PID segment of any incoming messages. SAIRS will not populate this field in any outgoing messages with a PID segment.
19	16	ST	[0..0]	[0..0]		SSN Number - Patient	X	X	SAIRS will ignore this field if it is included in the PID segment of any incoming

SEQ	LEN	Data Type	CDC IG Cardinality	SAIRS Cardinality	Value Set	Element Name	CDC IG Usage	SAIRS Usage	Constraint
									messages. SAIRS will not populate this field in any outgoing messages with a PID segment.
20		DLN	[0..0]	[0..0]		Driver's License Number - Patient	X	X	SAIRS will ignore this field if it is included in the PID segment of any incoming messages. SAIRS will not populate this field in any outgoing messages with a PID segment.
21		CX	[0..0]	[0..0]		Mother's Identifier	X	X	SAIRS will ignore this field if it is included in the PID segment of any incoming messages. SAIRS will not populate this field in any outgoing messages with a PID segment.
22		CE	[0..1]	[0..1]	0189	Ethnic Group	RE	RE	First triplet shall contain H, N, or U if populated. Second triplet shall contain government issued code from table 0189, if populated. If both are populated, they must match logically. If an invalid value is supplied in the incoming message, SAIRS will return an error but will continue to process the incoming message. Outgoing messages will include the first and second triplet data as available.
23	60	ST	[0..1]	[0..1]		Birth Place	O	O	Any value supplied in the incoming message should be the standard text name of the birth facility and will be loaded into the Birth Facility field on the Patient Demographics screen. For outgoing messages, the value will be populated with the Birth Facility Name

SEQ	LEN	Data Type	CDC IG Cardinality	SAIRS Cardinality	Value Set	Element Name	CDC IG Usage	SAIRS Usage	Constraint
									when available.
24	1	ID	[0..1]	[0..1]	0136	Multiple Birth Indicator	RE	RE	The acceptable values are Y and N. If the status is undetermined, then field shall be empty. If an invalid value is supplied in the incoming message, SAIRS will return an error but will continue to process the incoming message.
25	2	NM	[0..1]	[0..1]		Birth Order	CE	CE	If Multiple Birth Indicator is populated with Y, then this field should contain the number indicating the person's birth order, with 1 for the first child born, 2 for the second, etc. If an invalid value is supplied in the incoming message, SAIRS will return an error but will continue to process the incoming message.
26		CE	[0..1]	[0..0]	0171	Citizenship	O	X	SAIRS will ignore this field if it is included in the PID segment of any incoming messages. SAIRS will not populate this field in any outgoing messages with a PID segment.
27		CE	[0..1]	[0..0]	0172	Veterans Military Status	O	X	SAIRS will ignore this field if it is included in the PID segment of any incoming messages. SAIRS will not populate this field in any outgoing messages with a PID segment.
28		CE	[0..1]	[0..0]	0212	Nationality	O	X	SAIRS will ignore this field if it is included in the PID segment of any incoming messages. SAIRS will not populate this field in any outgoing messages with a PID segment.

SEQ	LEN	Data Type	CDC IG Cardinality	SAIRS Cardinality	Value Set	Element Name	CDC IG Usage	SAIRS Usage	Constraint
29		TS	[0..1]	[0..1]		Patient Death Date and Time	RE	RE	SAIRS will only use the date portion of any value specified in this field in an incoming message. If an invalid value is supplied, SAIRS will return an error but will continue to process the incoming message. For outgoing messages, only the date portion of the field will be populated (when available).
30	1	ID	[0..1]	[0..1]	0136	Patient Death Indicator	CE	CE	If patient death date is populated, then this field should be populated. If an invalid value is supplied in the incoming message, SAIRS will return an error but will continue to process the incoming message.
31	1	ID	[0..1]	[0..0]	0136	Identity Unknown Indicator	O	X	SAIRS will ignore this field if it is included in the PID segment of any incoming messages. SAIRS will not populate this field in any outgoing messages with a PID segment.
32	20	IS	[0..1]	[0..0]	0445	Identity Reliability Code	O	X	SAIRS will ignore this field if it is included in the PID segment of any incoming messages. SAIRS will not populate this field in any outgoing messages with a PID segment.
33		TS	[0..1]	[0..1]		Last Update Date/Time	O	O	If this field is specified in the incoming message, the information contained in this segment will only be used to update the patient's demographic record if the value specified in this field is after the most recent modification date for the matching record in SAIRS. If an invalid value is supplied, SAIRS will

SEQ	LEN	Data Type	CDC IG Cardinality	SAIRS Cardinality	Value Set	Element Name	CDC IG Usage	SAIRS Usage	Constraint
									return an error but will continue to process the incoming message. For outgoing messages, this field will be populated with the date/time that the primary patient demographic record was last updated in SAIRS.
34		HD	[0..1]	[0..0]		Last Update Facility	O	X	SAIRS will ignore this field if it is included in the PID segment of any incoming messages. SAIRS will not populate this field in any outgoing messages with a PID segment.
35		CE	[0..1]	[0..0]	0446	Species Code	O	X	SAIRS will ignore this field if it is included in the PID segment of any incoming messages. SAIRS will not populate this field in any outgoing messages with a PID segment.
36		CE	[0..1]	[0..0]	0447	Breed Code	O	X	SAIRS will ignore this field if it is included in the PID segment of any incoming messages. SAIRS will not populate this field in any outgoing messages with a PID segment.
37	80	ST	[0..1]	[0..0]		Strain	O	X	SAIRS will ignore this field if it is included in the PID segment of any incoming messages. SAIRS will not populate this field in any outgoing messages with a PID segment.
38		CE	[0..1]	[0..0]	0429	Production Class Code	O	X	SAIRS will ignore this field if it is included in the PID segment of any incoming messages. SAIRS will not populate this field in any outgoing messages with a PID segment.

SEQ	LEN	Data Type	CDC IG Cardinality	SAIRS Cardinality	Value Set	Element Name	CDC IG Usage	SAIRS Usage	Constraint
39		CWE	[0..1]	[0..0]	0171	Tribal Citizenship	O	X	SAIRS will ignore this field if it is included in the PID segment of any incoming messages. SAIRS will not populate this field in any outgoing messages with a PID segment.

Table 5-14: PID (Patient Identifier) Segment Definition

PV1 – Patient Visit Segment

Table 5-15 lists the fields that are part of the PV1 segment.

SEQ	LEN	Data Type	CDC IG Cardinality	SAIRS Cardinality	Value Set	Element Name	CDC IG Usage	SAIRS Usage	Constraint
1	4	SI		[0..1]		Set ID - PID		RE	
2	1	IS		[1..1]	0004	Patient Class		R	For incoming messages, SAIRS will ignore any value in this field and will treat all records as type "R". For outgoing messages, SAIRS will always set this field to a value of 'R'.
3	80	PL		[0..0]		Assigned Patient Location		X	SAIRS will ignore this field if it is included in the PV1 segment of any incoming messages. SAIRS will not populate this field in any outgoing messages with a PV1 segment.
4	2	IS		[0..0]	0007	Admission Type		X	SAIRS will ignore this field if it is included in the PV1 segment of any incoming messages. SAIRS will not populate this field in any outgoing messages with a PV1 segment.
5	20	CX		[0..0]		Readmit Number		X	SAIRS will ignore this field if it is included in the PV1 segment of any incoming messages.

SEQ	LEN	Data Type	CDC IG Cardinality	SAIRS Cardinality	Value Set	Element Name	CDC IG Usage	SAIRS Usage	Constraint
									SAIRS will not populate this field in any outgoing messages with a PV1 segment.
6	80	PL		[0..0]		Prior Patient Location		X	SAIRS will ignore this field if it is included in the PV1 segment of any incoming messages. SAIRS will not populate this field in any outgoing messages with a PV1 segment.
7	60	XCN		[0..0]	0010	Attending Doctor		X	SAIRS will ignore this field if it is included in the PV1 segment of any incoming messages. SAIRS will not populate this field in any outgoing messages with a PV1 segment.
8	60	XCN		[0..0]	0010	Referring Doctor		X	SAIRS will ignore this field if it is included in the PV1 segment of any incoming messages. SAIRS will not populate this field in any outgoing messages with a PV1 segment.
9	60	XCN		[0..0]	0010	Consulting Doctor		X	SAIRS will ignore this field if it is included in the PV1 segment of any incoming messages. SAIRS will not populate this field in any outgoing messages with a PV1 segment.
10	3	IS		[0..0]	0069	Hospital Service		X	SAIRS will ignore this field if it is included in the PV1 segment of any incoming messages. SAIRS will not populate this field in any outgoing messages with a PV1 segment.
11	80	PL		[0..0]		Temporary Location		X	SAIRS will ignore this field if it is included in the PV1 segment of any incoming messages. SAIRS will not populate this field in any

SEQ	LEN	Data Type	CDC IG Cardinality	SAIRS Cardinality	Value Set	Element Name	CDC IG Usage	SAIRS Usage	Constraint
									outgoing messages with a PV1 segment.
12	2	IS		[0..0]	0087	Readmit Test Indicator		X	SAIRS will ignore this field if it is included in the PV1 segment of any incoming messages. SAIRS will not populate this field in any outgoing messages with a PV1 segment.
13	2	IS		[0..0]	0092	Readmission Indicator		X	SAIRS will ignore this field if it is included in the PV1 segment of any incoming messages. SAIRS will not populate this field in any outgoing messages with a PV1 segment.
14	3	IS		[0..0]	0023	Admit Source		X	SAIRS will ignore this field if it is included in the PV1 segment of any incoming messages. SAIRS will not populate this field in any outgoing messages with a PV1 segment.
15	2	IS		[0..0]	0009	Ambulatory Status		X	SAIRS will ignore this field if it is included in the PV1 segment of any incoming messages. SAIRS will not populate this field in any outgoing messages with a PV1 segment.
16	2	IS		[0..0]	0099	VIP Indicator		X	SAIRS will ignore this field if it is included in the PV1 segment of any incoming messages. SAIRS will not populate this field in any outgoing messages with a PV1 segment.
17	60	XCN		[0..0]	0010	Admitting Doctor		X	SAIRS will ignore this field if it is included in the PV1 segment of any incoming messages. SAIRS will not populate this field in any outgoing messages with a PV1 segment.

SEQ	LEN	Data Type	CDC IG Cardinality	SAIRS Cardinality	Value Set	Element Name	CDC IG Usage	SAIRS Usage	Constraint
18	2	IS		[0..0]	0018	Patient Type		X	SAIRS will ignore this field if it is included in the PV1 segment of any incoming messages. SAIRS will not populate this field in any outgoing messages with a PV1 segment.
19	20	CX		[0..0]		Visit Number		X	SAIRS will ignore this field if it is included in the PV1 segment of any incoming messages. SAIRS will not populate this field in any outgoing messages with a PV1 segment.
20	50	FC		[0..1]	0064	Financial Class		O	If an invalid value is supplied in the incoming message, SAIRS will return an error but will continue to process the incoming message. For outgoing messages, this field will be set to the patient's current VFC Eligibility (if known).
21	2	IS		[0..0]	0032	Charge Price Indicator		X	SAIRS will ignore this field if it is included in the PV1 segment of any incoming messages. SAIRS will not populate this field in any outgoing messages with a PV1 segment.
22	2	IS		[0..0]	0045	Courtesy Code		X	SAIRS will ignore this field if it is included in the PV1 segment of any incoming messages. SAIRS will not populate this field in any outgoing messages with a PV1 segment.
23	2	IS		[0..0]	0046	Credit Rating		X	SAIRS will ignore this field if it is included in the PV1 segment of any incoming messages. SAIRS will not populate this field in any outgoing messages with a PV1 segment.

SEQ	LEN	Data Type	CDC IG Cardinality	SAIRS Cardinality	Value Set	Element Name	CDC IG Usage	SAIRS Usage	Constraint
24	2	IS		[0..0]	0044	Contract Code		X	SAIRS will ignore this field if it is included in the PV1 segment of any incoming messages. SAIRS will not populate this field in any outgoing messages with a PV1 segment.
25	8	DT		[0..0]		Contract Effective Date		X	SAIRS will ignore this field if it is included in the PV1 segment of any incoming messages. SAIRS will not populate this field in any outgoing messages with a PV1 segment.
26	12	NM		[0..0]		Contract Amount		X	SAIRS will ignore this field if it is included in the PV1 segment of any incoming messages. SAIRS will not populate this field in any outgoing messages with a PV1 segment.
27	3	NM		[0..0]		Contract Period		X	SAIRS will ignore this field if it is included in the PV1 segment of any incoming messages. SAIRS will not populate this field in any outgoing messages with a PV1 segment.
28	2	IS		[0..0]	0073	Interest Code		X	SAIRS will ignore this field if it is included in the PV1 segment of any incoming messages. SAIRS will not populate this field in any outgoing messages with a PV1 segment.
29	1	IS		[0..0]	0110	Transfer to Bad Debt Code		X	SAIRS will ignore this field if it is included in the PV1 segment of any incoming messages. SAIRS will not populate this field in any outgoing messages with a PV1 segment.
30	8	DT		[0..0]		Transfer to Bad		X	SAIRS will ignore this field if it is included

SEQ	LEN	Data Type	CDC IG Cardinality	SAIRS Cardinality	Value Set	Element Name	CDC IG Usage	SAIRS Usage	Constraint
						Debt Date			in the PV1 segment of any incoming messages. SAIRS will not populate this field in any outgoing messages with a PV1 segment.
31	10	IS		[0..0]	0021	Bad Debt Agency Code		X	SAIRS will ignore this field if it is included in the PV1 segment of any incoming messages. SAIRS will not populate this field in any outgoing messages with a PV1 segment.
32	12	NM		[0..0]		Bad Debt Transfer Amount		X	SAIRS will ignore this field if it is included in the PV1 segment of any incoming messages. SAIRS will not populate this field in any outgoing messages with a PV1 segment.
33	12	NM		[0..0]		Bad Debt Recovery Amount		X	SAIRS will ignore this field if it is included in the PV1 segment of any incoming messages. SAIRS will not populate this field in any outgoing messages with a PV1 segment.
34	1	IS		[0..0]	0111	Delete Account Indicator		X	SAIRS will ignore this field if it is included in the PV1 segment of any incoming messages. SAIRS will not populate this field in any outgoing messages with a PV1 segment.
35	8	DT		[0..0]		Delete Account Date		X	SAIRS will ignore this field if it is included in the PV1 segment of any incoming messages. SAIRS will not populate this field in any outgoing messages with a PV1 segment.
36	3	IS		[0..0]	0112	Discharge Disposition		X	SAIRS will ignore this field if it is included in the PV1 segment of any incoming

SEQ	LEN	Data Type	CDC IG Cardinality	SAIRS Cardinality	Value Set	Element Name	CDC IG Usage	SAIRS Usage	Constraint
									messages. SAIRS will not populate this field in any outgoing messages with a PV1 segment.
37	25	CM		[0..0]	0113	Discharged to Location		X	SAIRS will ignore this field if it is included in the PV1 segment of any incoming messages. SAIRS will not populate this field in any outgoing messages with a PV1 segment.
38	80	CE		[0..0]	0114	Diet Type		X	SAIRS will ignore this field if it is included in the PV1 segment of any incoming messages. SAIRS will not populate this field in any outgoing messages with a PV1 segment.
39	2	IS		[0..0]	0115	Servicing Facility		X	SAIRS will ignore this field if it is included in the PV1 segment of any incoming messages. SAIRS will not populate this field in any outgoing messages with a PV1 segment.
40	1	IS		[0..0]	0116	Bed Status		X	SAIRS will ignore this field if it is included in the PV1 segment of any incoming messages. SAIRS will not populate this field in any outgoing messages with a PV1 segment.
41	2	IS		[0..0]	0117	Account Status		X	SAIRS will ignore this field if it is included in the PV1 segment of any incoming messages. SAIRS will not populate this field in any outgoing messages with a PV1 segment.
42	80	PL		[0..0]		Pending Location		X	SAIRS will ignore this field if it is included in the PV1 segment of any incoming messages.

SEQ	LEN	Data Type	CDC IG Cardinality	SAIRS Cardinality	Value Set	Element Name	CDC IG Usage	SAIRS Usage	Constraint
									SAIRS will not populate this field in any outgoing messages with a PV1 segment.
43	80	PL		[0..0]		Prior Temporary Location		X	SAIRS will ignore this field if it is included in the PV1 segment of any incoming messages. SAIRS will not populate this field in any outgoing messages with a PV1 segment.
44	26	TS		[0..0]		Admit Date/Time		X	SAIRS will ignore this field if it is included in the PV1 segment of any incoming messages. SAIRS will not populate this field in any outgoing messages with a PV1 segment.
45	26	TS		[0..0]		Discharge Date/Time		X	SAIRS will ignore this field if it is included in the PV1 segment of any incoming messages. SAIRS will not populate this field in any outgoing messages with a PV1 segment.
46	12	NM		[0..0]		Current Patient Balance		X	SAIRS will ignore this field if it is included in the PV1 segment of any incoming messages. SAIRS will not populate this field in any outgoing messages with a PV1 segment.
47	12	NM		[0..0]		Total Charges		X	SAIRS will ignore this field if it is included in the PV1 segment of any incoming messages. SAIRS will not populate this field in any outgoing messages with a PV1 segment.
48	12	NM		[0..0]		Total Adjustments		X	SAIRS will ignore this field if it is included in the PV1 segment of any incoming messages.

SEQ	LEN	Data Type	CDC IG Cardinality	SAIRS Cardinality	Value Set	Element Name	CDC IG Usage	SAIRS Usage	Constraint
									SAIRS will not populate this field in any outgoing messages with a PV1 segment.
49	12	NM		[0..0]		Total Payments		X	SAIRS will ignore this field if it is included in the PV1 segment of any incoming messages. SAIRS will not populate this field in any outgoing messages with a PV1 segment.
50	20	CX		[0..0]	0203	Alternate Visit ID		X	SAIRS will ignore this field if it is included in the PV1 segment of any incoming messages. SAIRS will not populate this field in any outgoing messages with a PV1 segment.
51	1	IS		[0..0]	0326	Visit Indicator		X	SAIRS will ignore this field if it is included in the PV1 segment of any incoming messages. SAIRS will not populate this field in any outgoing messages with a PV1 segment.
52	60	XCN		[0..0]	0010	Other Healthcare Provider		X	SAIRS will ignore this field if it is included in the PV1 segment of any incoming messages. SAIRS will not populate this field in any outgoing messages with a PV1 segment.

Table 5-15: PV1 (Patient Visit) Segment Definition

PV2 – Patient Visit Segment

This segment not supported by this HL7 interface.

QAK – Query Acknowledgement Segment

Table 5-16 lists the fields that are part of the QAK segment.

SEQ	LEN	Data Type	CDC IG Cardinality	SAIRS Cardinality	Value Set	Element Name	CDC IG Usage	SAIRS Usage	Constraint
1	32	ST	[1..1]	[1..1]		Query Tag	R	R	SAIRS will populate this field with the contents of the QPD-2 field sent in the incoming message.
2	2	ID	[0..1]	[1..1]	0208	Query Response Status	O	R	SAIRS will always populate this field with a valid value indicating the result of processing the message.
3		CE	[0..1]	[0..1]	0471	Message Query Name	O	O	SAIRS will populate this field with the contents of the QPD-1 field sent in the incoming message.
4	10	NM	[0..1]	[0..0]		Hit Count	O	X	SAIRS will not populate this field in any outgoing messages with a QAK segment.
5	10	NM	[0..1]	[0..0]		This payload	O	X	SAIRS will not populate this field in any outgoing messages with a QAK segment.
6	10	NM	[0..1]	[0..0]		Hits remaining	O	X	SAIRS will not populate this field in any outgoing messages with a QAK segment.

Table 5-16: QAK (Query Acknowledgement) Segment Definition

QPD – Query Parameter Definition

Table 5-17 lists the fields that are part of the QPD segment.

SEQ	LEN	Data Type	CDC IG Cardinality	SAIRS Cardinality	Value Set	Element Name	CDC IG Usage	SAIRS Usage	Constraint
1		CE	[1..1]	[1..1]	0471	Message Query Name	R	R	SAIRS requires all incoming QBP messages to specify the value 'Z34^Request Immunization History^HL70471' in this field. Any other value will cause the message to be rejected.
2	32	ST	[1..1]	[1..1]		Query Tag	R	R	Generated by the initiating system. SAIRS will not use the value supplied in this field when processing the incoming message.
– Begin QPD Input Parameter Specifications									
<i>NOTE: Refer to the referenced fields in the PID segment for additional information on the indicated values.</i>									
3		CX				Patient List	RE	RE	PID-3: Patient Identifier List

SEQ	LEN	Data Type	CDC IG Cardinality	SAIRS Cardinality	Value Set	Element Name	CDC IG Usage	SAIRS Usage	Constraint
4		XPN				Patient Name	RE	R	PID-5: Patient Name
5		XPN				Patient Mother Maiden Name	RE	RE	PID-6: Mother's Maiden Name
6		TS				Patient Date of Birth	RE	RE	PID-7: Patient Date of Birth
7		IS				Patient Sex	RE	RE	PID-8: Patient Sex
8		XAD				Patient Address	RE	RE	PID-11: Patient Address – this field is ignored in the search
9		XTN				Patient Home Phone	RE	RE	PID-13: Patient Home Phone – this field is ignored in the search
10		ID				Patient Multiple Birth Indicator	RE	RE	PID-24: Patient Multiple Birth Indicator – this field is ignored in the search
11		NM				Patient Birth Order	RE	RE	PID-25: Patient Birth Order – this field is ignored in the search
12		TS				Client Last Updated Date	RE	RE	SAIRS will ignore any value in this field and will not use it to refine the search results.
13		HD				Client Last Update Facility	RE	RE	SAIRS will ignore any value in this field and will not use it to refine the search results.

– End QPD Input Parameter Specifications

Table 5-17: QPD (Query Parameter Definition) Segment Definition

(TBD: Need to document the matching algorithm in detail once development is complete. (It will be based off the 2.3.1 algorithm, but there are more fields available in the HL7 2.5.1 QPD segment, so it will need to be updated.) Need to include any business rules around which/how many search criteria are required before searching.)

RCP – Response Control Parameter Segment

Table 5-18 lists the fields that are part of the RCP segment.

SEQ	LEN	Data Type	CDC IG Cardinality	SAIRS Cardinality	Value Set	Element Name	CDC IG Usage	SAIRS Usage	Constraint
1	1	ID	[0..1]	[0..1]	0091	Query Priority	O	O	SAIRS will ignore any value supplied in this field in an incoming message and will process it as if the value of 'I' was

SEQ	LEN	Data Type	CDC IG Cardinality	SAIRS Cardinality	Value Set	Element Name	CDC IG Usage	SAIRS Usage	Constraint
									supplied.
2		CQ	[0..1]	[0..1]	0126	Quantity Limited Request	O	O	SAIRS requires the unit for this to always be 'RD'. Any value without a unit of 'RD' will be interested as invalid. An empty or invalid value will be treated as if no limit was submitted. SAIRS will return up to 25 records or the value indicated in this field, whichever is less.
3		CE	[0..1]	[0..1]	0394	Response Modality	O	O	SAIRS will ignore any value supplied in this field in an incoming message and will process it as if the value of 'R' was supplied.
4		TS	[0..1]	[0..0]		Execution and Delivery Time	O	X	SAIRS will ignore this field if it is included in the RSP segment of any incoming messages.
5	1	ID	[0..1]	[0..0]	0395	Modify Indicator	O	X	SAIRS will ignore this field if it is included in the RSP segment of any incoming messages.
6		SRT	[0..1]	[0..0]		Sort-by Field	O	X	SAIRS will ignore this field if it is included in the RSP segment of any incoming messages.
7		ID	[0..*]	[0..0]		Segment group inclusion	O	X	SAIRS will ignore this field if it is included in the RSP segment of any incoming messages.

Table 5-18: RCP (Response Control Parameter)

RXA – Pharmacy/Treatment Administration Segment

Table 5-19 lists the fields that are part of the RXA segment.

SEQ	LEN	Data Type	CDC IG Cardinality	SAIRS Cardinality	Value Set	Element Name	CDC IG Usage	SAIRS Usage	Constraint
1	4	NM	[1..1]	[1..1]		Give Sub-ID Counter	R	R	Constrain to 0 (zero)
2	4	NM	[1..1]	[1..1]		Administration Sub-ID Counter	R	R	Constrain to 1

SEQ	LEN	Data Type	CDC IG Cardinality	SAIRS Cardinality	Value Set	Element Name	CDC IG Usage	SAIRS Usage	Constraint
3		TS	[1..1]	[1..1]		Date/Time Start of Administration	R	R	SAIRS will only use the date portion of the value in this field in an incoming message. For outgoing messages, only the date portion of this field will have a value.
4		TS	[0..1]	[0..1]		Date/Time End of Administration	RE	RE	SAIRS will ignore any value in this field in the incoming message and will only use the date in RXA-3. For outgoing messages, this field will be populated with the same value that appears in RXA-3.
5		CE	[1..1]	[1..1]	0292	Administered Code	R	R	SAIRS requires that one of the triplets in the incoming message contain the CVX code and will use the CVX code to identify the vaccine administered. If a CVX code is not included, then the incoming message is rejected. Only the CVX code will be included in this field in outgoing messages.
6	20	NM	[1..1]	[1..1]		Administered Amount	R	R	If administered amount is not recorded, use 999. For outgoing messages, if the vaccine is refused, a value of 999 will be included in this field.
7		CE	[0..1]	[0..1]		Administered Units	CE	CE	If previous field is populated by any value except 999, it is required. SAIRS expects a value of "ML^ISO+" in this field in incoming messages indicating the administered amount is measured in milliliters. All other values will be ignored. For outgoing messages, this field will

SEQ	LEN	Data Type	CDC IG Cardinality	SAIRS Cardinality	Value Set	Element Name	CDC IG Usage	SAIRS Usage	Constraint
									always be populated with "ML^ISO+".
8		CE	[0..1]	[0..0]		Administered Dosage Form	O	X	SAIRS will ignore this field if it is included in the RXA segment of any incoming messages. SAIRS will not populate this field in any outgoing messages with a RXA segment.
9		CE	[0..*]	[0..1]	NIP 0001	Administration Notes	RE	RE	SAIRS will interpret this field as an indication of the source of this record. To indicate the source of the record, the Registry expects one of the following values for the first two components: <ul style="list-style-type: none"> o "00^NEW IMMUNIZATION RECORD^NIP001" for vaccinations administered. o "01^HISTORICAL INFORMATION - SOURCE UNSPECIFIED" for vaccinations that are marked as historical. Any immunization not explicitly identified in the incoming message as a new immunization record will be set to historical. For outgoing messages, the first instance of this field will include the historical vs. administered data. The second instance of this field will include any free text comments associated with the vaccination. As specified by the HL7 doc only the first 199 characters will be used of the comment.
10		XCN	[0..1]	[0..1]		Administering Provider	RE	RE	This shall be the provider who administered the immunization. It is expected to be empty if the immunization

SEQ	LEN	Data Type	CDC IG Cardinality	SAIRS Cardinality	Value Set	Element Name	CDC IG Usage	SAIRS Usage	Constraint
									<p>record is transcribed from a historical record.</p> <p>SAIRS will interpret the Unique ID (first component) of this field in the incoming message as the person's NPI (National Provider Identifier). If this matches a user within SAIRS associated with this clinic, then this user will be indicated in the Administered By field for the immunization. If a match cannot be found, SAIRS will return an error but will continue to process the incoming message.</p> <p>For outgoing messages, SAIRS will include the NPI as the Unique ID in this field of the person who administered the immunization (if available).</p>
11		LA2	[0..1]	[0..1]		Administered-at Location	RE	RE	<p>SAIRS will ignore any value included in this field in an incoming message. For any non-historical immunization, it will use the provider/clinic indicated in the Sending Facility field in the MSH segment to associate the immunization with a provider. All historical immunizations will be associated with the "PR" (Patient Record) clinic.</p> <p>For outgoing messages, this field will be populated with the relevant data from the Clinic associated to the immunization in SAIRS. If the clinic is "PR", then this field will be empty.</p>
12	20	ST	[0..1]	[0..0]		Administered Per (Time Unit)	O	X	<p>SAIRS will ignore this field if it is included in the RXA segment of any incoming messages.</p>

SEQ	LEN	Data Type	CDC IG Cardinality	SAIRS Cardinality	Value Set	Element Name	CDC IG Usage	SAIRS Usage	Constraint
									SAIRS will not populate this field in any outgoing messages with a RXA segment.
13	20	NM	[0..1]	[0..0]		Administered Strength	O	X	SAIRS will ignore this field if it is included in the RXA segment of any incoming messages. SAIRS will not populate this field in any outgoing messages with a RXA segment.
14		CE	[0..1]	[0..0]		Administered Strength Units	O	X	SAIRS will ignore this field if it is included in the RXA segment of any incoming messages. SAIRS will not populate this field in any outgoing messages with a RXA segment.
15	20	ST	[0..*]	[0..1]		Substance Lot Number	RE	RE	SAIRS will interpret any value included in this field in an incoming message as the lot number for the vaccine. No parsing or other manipulation will be performed on this value before storing it in the Registry.
16		TS	[0..1]	[0..1]		Substance Expiration Date	CE	CE	If the lot number is populated, this field should be valued. SAIRS will only use the date portion of the value in this field. If an invalid date is supplied in the incoming message, SAIRS will return an error but will continue to process the incoming message.
17		CE	[0..*]	[0..1]	0227	Substance Manufacturer Name	RE	RE	SAIRS requires that any value included in this field in the incoming message be a valid MVX code. If an invalid MVX is supplied, SAIRS will return an error but will continue to process the incoming message.
18		CE	[0..*]	[0..1]	NIP 002	Substance/Treatment Refusal Reason	C	C	If the Completion status is RE, then this shall be populated. If an invalid value is supplied in the

SEQ	LEN	Data Type	CDC IG Cardinality	SAIRS Cardinality	Value Set	Element Name	CDC IG Usage	SAIRS Usage	Constraint
									incoming message, SAIRS will return an error but will continue to process the incoming message.
19		CE	[0..1]	[0..0]		Indication	O	X	SAIRS will ignore this field if it is included in the RXA segment of any incoming messages. SAIRS will not populate this field in any outgoing messages with a RXA segment.
20	2	ID	[0..1]	[0..1]	0322	Completion Status	RE	RE	If this field is not populated, it is assumed to be CP or complete. If the Refusal reason is populated, this field shall be set to RE. If an invalid value is supplied in the incoming message, SAIRS will return an error but will continue to process the incoming message. For outgoing messages, SAIRS will include CP for all administered and historical vaccinations, and RE for any refused vaccines.
21	2	ID	[0..1]		0323	Action Code - RXA	RE		Refer to the text following this table for additional information on how incoming immunizations are matched (or not) to existing immunizations for a patient.
22		TS	[0..1]	[0..0]		System Entry Date/Time	O	X	If vaccination date can not be found the system will try to use this date. SAIRS will ignore this field if it is included in the RXA segment of any incoming messages. SAIRS will not populate this field in any outgoing messages with a RXA segment.

SEQ	LEN	Data Type	CDC IG Cardinality	SAIRS Cardinality	Value Set	Element Name	CDC IG Usage	SAIRS Usage	Constraint
23	5	NM	[0..1]	[0..0]		Administered Drug Strength Volume	O	X	SAIRS will ignore this field if it is included in the RXA segment of any incoming messages. SAIRS will not populate this field in any outgoing messages with a RXA segment.
24		CWE	[0..1]	[0..0]		Administered Drug Strength Volume Units	O	X	SAIRS will ignore this field if it is included in the RXA segment of any incoming messages. SAIRS will not populate this field in any outgoing messages with a RXA segment.
25		CWE	[0..1]	[0..0]		Administered Barcode Identifier	O	X	SAIRS will ignore this field if it is included in the RXA segment of any incoming messages. SAIRS will not populate this field in any outgoing messages with a RXA segment.
26	1	ID	[0..1]	[0..0]	0480	Pharmacy Order Type	O	X	SAIRS will ignore this field if it is included in the RXA segment of any incoming messages. SAIRS will not populate this field in any outgoing messages with a RXA segment.

Table 5-19: RXA (Pharmacy/Treatment Administration) Segment Definition

TBD: Need to document the vaccination matching algorithm in detail once development is complete. (It will be based off the 2.3.1 algorithm, but may have some modifications.)

RXR – Pharmacy/Treatment Route Segment

Table 5-20 lists the fields that are part of the RXR segment.

SEQ	LEN	Data Type	CDC IG Cardinality	SAIRS Cardinality	Value Set	Element Name	CDC IG Usage	SAIRS Usage	Constraint
-----	-----	-----------	--------------------	-------------------	-----------	--------------	--------------	-------------	------------

SEQ	LEN	Data Type	CDC IG Cardinality	SAIRS Cardinality	Value Set	Element Name	CDC IG Usage	SAIRS Usage	Constraint
1		CE	[1..1]	[1..1]	0162	Route	R	R	If an invalid value is supplied in the incoming message, SAIRS will return an error but will continue to process the incoming message.
2		CWE	[0..1]	[0..1]	0163	Administration Site	RE	RE	If an invalid value is supplied in the incoming message, SAIRS will return an error but will continue to process the incoming message.
3		CE	[0..1]	[0..0]	0164	Administration Device	O	X	SAIRS will ignore this field if it is included in the RXA segment of any incoming messages. SAIRS will not populate this field in any outgoing messages with a RXA segment.
4		CE	[0..1]	[0..0]	0165	Administration Method	O	X	SAIRS will ignore this field if it is included in the RXA segment of any incoming messages. SAIRS will not populate this field in any outgoing messages with a RXA segment.
5		CE	[0..1]	[0..0]		Routing Instruction	O	X	SAIRS will ignore this field if it is included in the RXA segment of any incoming messages. SAIRS will not populate this field in any outgoing messages with a RXA segment.
6		CWE	[0..1]	[0..0]	0495	Administration Site Modifier	O	X	SAIRS will ignore this field if it is included in the RXA segment of any incoming messages. SAIRS will not populate this field in any outgoing messages with a RXA segment.

Table 5-20: RXR (Pharmacy/Treatment Route) Segment Definition

SFT – Software Segment

This segment not supported by this HL7 interface.

TQ1 – Timing/Quality Segment

This segment not supported by this HL7 interface.

TQ2 – Timing/Quality Segment

This segment not supported by this HL7 interface.

6. Messages for Transmitting Immunization Information

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

Table 6-1 defines the message types supported by SAIRS.

MESSAGE	PURPOSE	RELATED MESSAGES	ASSOCIATED PROFILES	SUPPORTED BY SAIRS?
VXU	Send Immunization History	ACK		SAIRS accepts incoming VXU messages from an external system. SAIRS only sends this type of message via an outgoing batch file.
QBP	Request Immunization History and Request Person Id	RSP	Z34^CDC	SAIRS accepts incoming QBP messages from an external system. SAIRS does not support sending this type of message to an external system.
RSP	Respond to Request for Immunization Record and Respond to Request for Person Id	QBP	Z31^CDC Z32^CDC	SAIRS sends this type of message in response to an incoming QBP. SAIRS does not accept this type of message from an external system.
ACK	Send Message Acknowledgement	VXU, ADT, QBP		SAIRS sends this type of message in response to incoming messages. SAIRS does not accept this type of message from an external system.

MESSAGE	PURPOSE	RELATED MESSAGES	ASSOCIATED PROFILES	SUPPORTED BY SAIRS?
ADT	Send Person Demographic Data	ACK		Not Supported

Table 6-1: Supported Messages

VXU – Send Immunization History

Obviously, the only way for SAIRS to be able to make available a patient’s immunization history is for providers who are physically administering the immunizations to notify the Registry in a timely fashion of each vaccination they have administered. This immunization information is then consolidated with similar information from other providers to produce the full vaccination record for a person.

To this end, providers desiring to submit vaccination information to SAIRS will use the VXU message. The Registry will respond with an ACK message indicating the success or failure of the update. In the case of failure, this message will include the applicable error message.

Table 6-2 lists the segments that are part of a VXU message.

Segment	CDC IG Cardinality	SAIRS Cardinality	CDC IG Usage	SAIRS Usage	Comment
MSH	[1..1]	[1..1]	R	R	Every message begins with an MSH.
{{SFT}}	[0..*]	[0..0]	O	X	Not supported by SAIRS. The segment will not be included in any outgoing VXU messages. The segment will be ignored if included in any incoming VXU messages.
PID	[1..1]	[1..1]	R	R	Every VXU has one PID segment.
PD1	[0..1]	[0..1]	RE	RE	Every PID segment in VXU may have one or less PD1 segment
NK1	[0..*]	[0..*]	RE	RE	The PID segment in a VXU may have zero or more NK1 segments.
PV1	[0..1]	[0..1]	RE	RE	The PID segment in a VXU may have zero or one PV1 segment. Subsequent messages regarding the same patient/client may have a different PV1 segment.
PV2	[0..1]	[0..0]	O	X	Not supported by SAIRS. The segment will not be included in any outgoing VXU messages. The segment will be ignored if included in any incoming VXU

Segment	CDC IG Cardinality	SAIRS Cardinality	CDC IG Usage	SAIRS Usage	Comment
					messages.
GT1	[0..1]	[0..0]	O	X	Not supported by SAIRS. The segment will not be included in any outgoing VXU messages. The segment will be ignored if included in any incoming VXU messages.
IN1	[0..1]	[0..0]	O	X	Not supported by SAIRS. The segment will not be included in any outgoing VXU messages. The segment will be ignored if included in any incoming VXU messages.
IN2	[0..1]	[0..0]	O	X	Not supported by SAIRS. The segment will not be included in any outgoing VXU messages. The segment will be ignored if included in any incoming VXU messages.
IN3	[0..1]	[0..0]	O	X	Not supported by SAIRS. The segment will not be included in any outgoing VXU messages. The segment will be ignored if included in any incoming VXU messages.
Begin Order Group					Each VXU may have zero or more Order groups
ORC	[1..*]	[1..*]	RE	RE	The PID segment in a VXU may have one or more ORC segments.
TQ1	[0..1]	[0..0]	O	X	Not supported by SAIRS. The segment will not be included in any outgoing VXU messages. The segment will be ignored if included in any incoming VXU messages.
TQ2	[0..1]	[0..0]	O	X	Not supported by SAIRS. The segment will not be included in any outgoing VXU messages. The segment will be ignored if included in any incoming VXU messages.
RXA	[1..1]	[1..1]	R	R	Each ORC segment in a VXU must have one RXA segment. Every RXA requires an ORC segment.
RXR	[0..1]	[0..1]	RE	RE	Every RXA segment in a VXU

Segment	CDC IG Cardinality	SAIRS Cardinality	CDC IG Usage	SAIRS Usage	Comment
					may have zero or one RXR segments.
OBX	[0..*]	[0..*]	RE	RE	Every RXA segment in a VXU may have zero or more OBX segments.
NTE	[0..1]	[0..1]	RE	RE	Every OBX segment in a VXU may have zero or one NTE segment.
End Order Group					

Table 6-2: VXU (Send Immunization History) Message Definition

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

ACK – Acknowledging a Message

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

Table 6-3 lists the segments that are part of an ACK message.

Segment	CDC IG Cardinality	SAIRS Cardinality	CDC IG Usage	SAIRS Usage	Comment
MSH	[1..1]	[1..1]	R	R	Every message begins with an MSH.
[[SFT]]	(0..1)	[0..0]	O	X	Not supported by SAIRS. The segment will not be included in any outgoing ACK messages.
MSA	(1..1)	[1..1]	R	R	
[[ERR]]	(0..*)		RE		Include if there are errors.

Table 6-3: ACK (Acknowledging a Message) Message Definition

QBP – Query for Immunization History

SAIRS supports the Query and Response Profile from the CDC IG that replicates the functionality of the VXQ/VXX/VXR query and responses. Under this profile, the incoming QBP message to request an immunization history is defined as outlined in Table 6-4.

Segment	CDC IG Cardinality	SAIRS Cardinality	CDC IG Usage	SAIRS Usage	Comment
MSH	[1..1]	[1..1]	R	R	Every message begins with an MSH.
[[SFT]]	[0..*]	[0..0]	O	X	Not supported by SAIRS. The segment will be ignored if

Segment	CDC IG Cardinality	SAIRS Cardinality	CDC IG Usage	SAIRS Usage	Comment
					included in any incoming VXU messages.
QPD	[1..1]	[1..1]	R	R	
RCP	Response Control Parameters	[1..1]	R	R	The Query Profile will list the segments that are expected to be returned in response to this query.
[DSC]	Continuation Pointer	[0..0]	O	X	Not supported by SAIRS. The segment will be ignored if included in any incoming VXU messages.

Table 6-4: QBP (Query for Immunization History) Message Definition

RSP – Respond to Request for Information

As outlined in the CDC IG, the response to the incoming query will vary based on the results of the query. Table 6-5 outlines these possible options.

Outcome of Query	Response Message
No match found	Response indicates that message was successfully processed and that no patients matched the criteria that were supplied in the QBP message.
Exactly one high confidence match found	Response includes a complete immunization history as specified below.
At least one lower confidence match is found, but no more than the maximum number allowed	Response returns one PID with associated PD1 and NK1 segments for each potential match. No immunization history is returned.
More than the maximum number of matches allowed is found	Response indicates that the message was successfully processed, but that too many potential matches were found. The maximum number allowed is the lower of the maximum number requested and the maximum number that the receiving system will return.
Message is not well formed and has fatal errors.	Response indicates that the message was not successfully processed and may indicate errors.

Table 6-5: Possible Responses to QBP Message

In the event that a single high confidence match is found, Table 6-6 outlines the grammar used in the RSP message. This is referred to as the **Z32^CDCPHINVS** profile.

Segment	Cardinality	HL7 Optionality	Comment
MSH	[1..1]	R	The MSH will indicate which query is being responded to and what Query Profile it was based on.
MSA	[1..1]	R	
[ERR]	[0..1]	O	If errors exist, then this segment is populated
QAK	[1..1]	R	
QPD	[1..1]	R	This segment echoes the

Segment	Cardinality	HL7 Optionality	Comment
			Query Parameter Definition Segment sent in the requesting query.
{	[0..1]	O	– Response Group Begin If a query errors out or if no matching patient is found, then the segments in the Response Group will not be returned.
{	[0..*]	O	– Patient Identifier Group Begin
PID	[1..1]	R	
[PD1]	[0..1]	RE	
{{NK1}}	[0..*]	RE	
}			– Patient Identifier Group End
[[0..1]	O	– Immunization History Group Begin
[PV1]	[0..0]	X	Not supported in outgoing RSP messages (filling financial class into OBX-3)
[IN1]	[0..0]	X	Not supported
{	[0..*]	RE	– Order Group Begin
ORC	[1..1]	R	Required if client has immunization records (RXA). There is one ORC for each RXA.
			– Pharmacy Administration Group Begin
RXA	[1..1]	R	
[RXR]	[0..1]	RE	
{	[0..*]	RE	– Observation Group Begin
OBX	[1..1]	R	
[NTE]	[0..1]	RE	
}			– Observation Group End
			– Pharmacy Administration Group End
}			– Order Group End
]			– Immunization History Group End
}}			– Response Group End

Table 6-6: RSP (Return an Immunization History) Message Definition

In the event that a one or more lower-confidence matches are found, Table 6-7 outlines the grammar used in the RSP message. This is referred to as the **Z31^CDCPHINVS** profile.

Segment	Cardinality	HL7 Optionality	Comment
MSH	[1..1]	R	The MSH will indicate which query is being responded to and what Query Profile it was based on.
MSA	[1..1]	R	
[ERR]	[0..1]	O	If errors exist, then this

Segment	Cardinality	HL7 Optionality	Comment
			segment is populated
QAK	[1..1]	R	
QPD	[1..1]	R	This segment echoes the Query Parameter Definition Segment sent in the requesting query.
{	[0..1]	O	– Response Group Begin If a query errors out or if no matching patient is found, then the segments in the Response Group will not be returned.
{	[0..*]	O	– Patient Identifier Group Begin <i>Note: One Patient Identifier Group will be included for each patient matching the results.</i>
PID	[1..1]	R	
[PD1]	[0..1]	RE	
[[NK1]]	[0..*]	RE	
}}			– Patient Identifier Group End
[[0..0]	X	– Immunization History Group Begin <i>NOTE: None of the segments in this group will be returned in this situation.</i>
[PV1]	[0..1]	O	
[[IN1]	[0..0]	X	Not supported
{	[0..*]	RE	– Order Group Begin
ORC	[1..1]	R	Required if client has immunization records (RXA). There is one ORC for each RXA.
			– Pharmacy Administration Group Begin
RXA	[1..1]	R	
[RXR]	[0..1]	RE	
{	[0..*]	RE	– Observation Group Begin
OBX	[1..1]	R	
[NTE]	[0..1]	RE	
}}			– Observation Group End
			– Pharmacy Administration Group End
}}			– Order Group End
]			– Immunization History Group End
}}			– Response Group End

Table 6-7: RSP (Return a List of Candidates) Message Definition

ADT – Admission Discharge Treatment

The ADT message is not supported by SAIRS.

7. Message Logging

All incoming messages are logged within the SAIRS database, as well as the outgoing response to each message. Users with the necessary permissions have access to screens within the HL7 Management module to review/search these logs.

8. Accessing the HL7 Interface

The SAIRS HL7 Coordinator will provide a username and password, the web link to the testing WSDL and production WSDL, and the SAIRS HL7 Facility ID(s).

9. Appendix A: Code Tables

Code Tables in this local Implementation Guide follow the same order, layout, and format of the Code Tables in the CDC IG. Only Code Tables that are different than the CDC IG are listed in this appendix.

User Defined Table 0001 – Sex

SAIRS supports the Sex/Gender codes listed in Table 9-1.

Value	Description	Comment
F	Female	
M	Male	
T	Transgendered	
U	Unknown/Undifferentiated	No assertion is made about the gender of the person.

Table 9-1: Supported Values for User Defined Table 0001 - Sex

HL7 Defined Table 0008 – Acknowledgement Code

SAIRS supports the Acknowledgement codes listed in Table 9-2.

Value	Description	Comment
AA	Original Mode: Application Accept <i>Enhanced mode not supported.</i>	Indicates the message was accepted and processed, and no error or warnings were generated.
AE	Original Mode: Application Error <i>Enhanced mode not supported.</i>	Indicates the message was accepted and processed, but one or more errors were generated.
AR	Original Mode: Application Reject <i>Enhanced mode not supported.</i>	Indicates one or more significant errors occurred and the message was rejected (i.e., it was not processed by the Registry).
CA	Enhanced mode: Accept acknowledgement: Commit Accept	Not supported
CE	Enhanced mode: Accept acknowledgement: Commit Error	Not supported
CR	Enhanced mode: Accept acknowledgement: Commit Reject	Not supported

Table 9-2: Supported Values for HL7 Defined Table 0008 – Acknowledgement Code

User Defined Table 0063 – Relationship

SAIRS supports the Relationship codes listed in Table 9-3.

Value	Description	Comment
BRM	Birth Mother	Additional locally-defined value. Loaded into the Birth Mother fields on the Patient Demographics screen.
BRO	Brother	
CGV	Caregiver	
FCH	Foster Child	
FTH	Father	
GRD	Guardian	
GRP	Grandparent	
MTH	Mother	
OTH	Other	
PAR	Parent	
SCH	Stepchild	
SEL	Self	Not supported
SIB	Sibling	
SIS	Sister	
SPO	Spouse	

Table 9-3: Supported Values for User Defined Table 0063 – Relationship

User Defined Table 0064 – Financial Class

SAIRS supports the Relationship codes listed in Table 9-4.

Value	Description	Comment
V00	VFC Eligibility not Determined/Unknown	
V01	Not VFC Eligible	Client does not qualify for VFC because they do not have one of the statuses below. This category does not include the underinsured (see V08).
V02	VFC Eligible – Medicaid/Medicaid Managed Care	Client is currently on Medicaid or Medicaid managed care.
V03	VFC Eligible – Uninsured	Client does not have insurance coverage for vaccinations.
V04	VFC Eligible – American Indian/Alaskan Native	Client is a member of a federally recognized tribe.
V05	VFC Eligible – Federally Qualified Health Center Patient (under-insured)	Client has insurance that partially covers vaccines received on visit and so is eligible for VFC coverage at a Federally Qualified Health Center. The client must be receiving the immunizations at the FQHC.
V06	DEPRECATED VFC Eligible – State	DEPRECATED Do not use this code. State

Value	Description	Comment
	Specific Eligibility	specific funding should either use V07 or a state generated code.
V07	Local – Specific Eligibility	Client is eligible for state supplied vaccine based on local specific rules and the vaccine administered is eligible for state- funding.
V08	DEPRECATED Not VFC Eligible - Underinsured	DEPRECATED Do not use this code. The MIROW effort determined that persons in this situation are V01, not VFC eligible. It is not necessary to differentiate this sub-class of Not VFC eligible.

Table 9-4: Supported Values for User Defined Table 0064 – Financial Class

HL7 Table 0190 – Address Type

SAIRS supports the subset of Address Types listed in Table 9-5.

Value	Description	Comment
B	Firm/Business	Not supported
BA	Bad Address	Not supported
BDL	Birth Delivery Location	City and State portions will be loaded into the Birth City and Birth State fields
BR	Residence at Birth	Loaded as the Patient’s Physical address
C	Current or Temporary	Loaded as the Patient’s Mailing address
F	Country of Origin	Not supported
H	Home	Loaded as the Patient’s Physical address
L	Legal	Loaded as the Patient’s Mailing address
M	Mailing	Loaded as the Patient’s Mailing address
N	Birth (nee)	Not supported
O	Office	Not supported
P	Permanent	Loaded as the Patient’s Physical address
RH	Registry Home	Not supported

Table 9-5: Supported Values for HL7 Table 0190 – Address Type

The following business rules apply to addresses sent in via the HL7 interface:

- Addresses will be parsed into a geo-coded address format (i.e., broken down into specific address components) prior to being saved in SAIRS. It is possible that this will cause the address saved with the patient’s record to be slightly different than the address passed in.
- SAIRS expects the city value to be one of the values in the City dropdown if the address is within the City of San Antonio. If the address is outside of the City of San Antonio, any value will be accepted in the City field.

- SAIRS expects there to be either 5 or 9 digits in the zip code component after the system removes all non-numeric characters (e.g., dash (-), forward slash(/), spaces, etc.)
- If an invalid address is supplied, SAIRS will return an error but will continue to process the incoming message.

HL7 Table 0200 – Name Type

SAIRS supports the subset of Name Types listed in Table 9-6.

Value	Description	Comment
A	Alias Name	Loaded into the Alias Name fields on the Patient Demographics screen.
B	Name at Birth	Not supported.
C	Adopted Name	Not supported.
D	Display Name	Not supported.
L	Legal Name	Loaded into the Patient Name fields on the Patient Demographics screen. (If the PID-3 field is type BR, then this value is also loaded into the Birth Name fields on the Patient Demographics screen.)
M	Maiden Name	Loaded into the Mother's Maiden Name field on the Patient Demographics screen.
P	Name of Partner/Spouse	Not supported.
U	Unspecified	Not supported.

Table 9-6: Supported Values for HL7 Table 0200 – Name Type

NOTE: Name values will be parsed by SAIRS to ensure a standardized format prior to searching for or updating a patient's record. This may result in slight variations of names submitted versus names returned.

HL7 Table 0201 – Telecommunication Use Code

SAIRS supports the Telecommunication Use Codes listed in Table 9-7.

Value	Description	Comment
ASN	Answering Service Number	Loaded as the Message Phone
BPN	Beeper Number	Loaded as the Pager
EMR	Emergency Number	Not supported
NET	Network (email) address	Loaded as the Email Address
ORN	Other Residence Number	Loaded as the Cell Phone
PRN	Primary Residence Number	Loaded as the Home Phone
VHN	Vacation Home Number	Not supported

Value	Description	Comment
WPN	Work Number	Loaded as the Work Phone

Table 9-7: Supported Values for HL7 Table 0201 – Telecommunication Use Code

HL7 Table 0203 – Identifier Type

SAIRS supports the subset of Identifier Types listed in Table 9-8.

Value	Description	Comment
BR	Birth Registry Number	Used to match to the patient's Birth Certificate ID field in SAIRS. <i>NOTE: This identifier should be only be used by Vital Records system submitting birth data to the Registry via HL7. Other external system types should not use this identifier type!</i>
MA	Patient's Medicaid Number	
MC	Patient's Medicare Number	
MR	Medical Record Number	Will be associated to the patient records in SAIRS as a local identifier associated with the clinic tied to the Facility Code in the incoming message.
SR	State Registry ID	The Patient ID associated to this patient in SAIRS. The value must contain only numeric digits.
SS	Social Security Number	The value must contain exactly 9 digits after all dashes and non-numeric characters are removed.

Table 9-8: Supported Values for HL7 Table 0203 – Identifier Type

If an invalid value is received for an Identifier, SAIRS will ignore the value and attempt to continue processing the message. It will return the appropriate error message.

HL7 Table 0215 – Publicity Code

SAIRS supports the Publicity Codes listed in Table 9-9.

Value	Description	Comment
01	No Reminder/Recall	Will set the "Do Not Include Patient in Reminder/Recall" checkbox on the Patient Demographics screen.
02	Reminder/Recall – Any Method	Not supported
03	Reminder/Recall – No Calls	Not supported
04	Reminder Only – Any Method	Not supported
05	Reminder Only – No	Not supported

Value	Description	Comment
	Calls	
06	Recall Only – Any Method	Not supported
07	Recall Only – No Calls	Not supported
08	Reminder/Recall – To Provider	Not supported
09	Reminder to Provider	Not supported
10	Only Reminder to Provider, no Recall	Not supported
11	Recall to Provider	Not supported
12	Only Recall to Provider, no Reminder	Not supported

Table 9-9: Supported Values for HL7 Table 0215 – Publicity Code

User-Defined Table 0361 – Application

SAIRS does not expect/require any specific values in this field. The contents of this field, if supplied, should be text and should not contain any of the reserved characters from MSH-2.

User-Defined Table 0362 – Facility

SAIRS requires a valid Sending Facility code in every HL7 message. Contact your SAIRS Help Desk for assistance in establishing a valid facility code.

Since SAIRS covers the City of San Antonio, the only appropriate Receiving Facility code is: SA0000.

User-Defined Table 0441 – Immunization Registry Status

SAIRS supports the Publicity Codes listed in Table 9-10.

Value	Description	Comment
A	Active	Patient will be marked as Open in the Immunization Program. (PD1-17 will be used to determine the Open date.)
I	Inactive – Unspecified	Patient will be marked as Closed in the Immunization Program. (PD1-17 will be used to determine the Close Date).
L	Inactive – Lost to Follow-Up (cannot contact)	Patient will be marked as Closed in the Immunization Program. (PD1-17 will be used to determine the Close Date).
M	Inactive – Moved or Gone Elsewhere (Transferred)	Patient will be marked as Closed in the Immunization Program. (PD1-17 will be used to determine the Close Date).
P	Inactive – Permanently Inactive (do not re-activate or add new entries to this	Patient will be marked as Closed in the Immunization Program. (PD1-17 will be used to determine the Close Date).

Value	Description	Comment
	record)	
U	Unknown	No change will be made to the Patient's Immunization Program enrollment
WA*	WIC: Active	Patient will be marked as Open in the WIC Program. (PD1-17 will be used to determine the Open date.)
WI*	WIC: Inactive – Unspecified	Patient will be marked as Closed in the WIC Program. (PD1-17 will be used to determine the Close Date).
WL*	WIC: Inactive – Lost to Follow-Up (cannot contact)	Patient will be marked as Closed in the WIC Program. (PD1-17 will be used to determine the Close Date).
WM*	WIC: Inactive – Moved or Gone Elsewhere (Transferred)	Patient will be marked as Closed in the WIC Program. (PD1-17 will be used to determine the Close Date).

Table 9-10: Supported Values for User-Defined Table 0441 – Immunization Registry Status

** - The inclusion of two characters in this field is an intentional deviation from the HL7 standard in order to support a specific need for the state of Kansas. Because no WIC program enrollment information will be sent out by the Registry, it should not affect any system not sending WIC program enrollment data. All non-WIC systems in Kansas and all systems in other jurisdictions should ignore these values.*

10. Appendix B: Example Messages

MSH|^~\&|TestEHR|SA9999|SAIRS|SA0000|20131021||VXU^V04^VXU_V04|SA10013
8854000000232|P|2.5.1||NE||
PID|1||432155^^DCS^MR||SIMPSON^BART^M^^^L||19990101150308|M|||123 Any
St^Somewhere^WI^54000^L
PD1|||||||||N|20090531
NK1|1|Patient^Sally|MTH^mother^HL70063|123 Any St^Somewhere^WI^54000^L
PV1|1|R|||||||||V02^20090531

ORC|RE||197023^DCS|||||^Clerk^Myron|||||DCS^Dabig Clinical System^StatellIS
RXA|0|1|20090415132511|20090415132511|31^Hep B Peds
NOS^CVX|999|||01^historical record^NIP0001|||||
OBX|1|CE|30956-7^vaccine type^LN|1|31^Hep B Peds NOS^CVX |||||F
OBX|2|CE|59779-9^Immunization Schedule
used^LN|1|VXC16^ACIP^CDCPHINVS|||||F|||20090531
OBX|3|NM|30973-2^dose number in series^LN|1|1|||||F|||20090531
OBX|4|NM|59782-3^number of doses in series^LN|1|3|||||F|||20090531

ORC|RE||197027^DCS|||||^Clerk^Myron||^Pediatric^MARY^^^L^^^MD
RXA|0|1|20090731132511|20090731132511|48^HIB PRP-T^CVX|999|||00^new
immunization
record^NIP0001|^Sticker^Nurse|^DCS_DC|||33k2a||PMC^sanofi^MVX|||CP
RXR|C28161^IM^NCIT^IM^IM^HL70162|
OBX|1|CE|30956-7^vaccine type^LN|1|17^HIB NOS^CVX |||||F
OBX|2|CE|59779-9^Immunization Schedule
used^LN|1|VXC16^ACIP^CDCPHINVS|||||F|||20090731
OBX|3|NM|30973-2^dose number in series^LN|1|1|||||F
OBX|4|NM|59782-3^number of doses in series^LN|1|4|||||F

ORC|RE||197028^DCS|||||^Clerk^Myron||^Pediatric^MARY^^^L^^^MD
RXA|0|1|20091031132511|20091031132511|110^DTAP-Hep B-IPV^CVX|999|||00^new
immunization
record^NIP0001|^Sticker^Nurse|^DCS_DC|||xy3939||SKB^GSK^MVX|||CP
RXR|^IM^IM^HL70162^C28161^IM^NCIT|
OBX|1|CE|30956-7^vaccine type^LN|1|31^Hep B Peds NOS^CVX |||||F
OBX|2|CE|59779-9^Immunization Schedule
used^LN|1|VXC16^ACIP^CDCPHINVS|||||F|||20090531
OBX|3|NM|30973-2^dose number in series^LN|1|2|||||F
OBX|4|NM|59782-3^number of doses in series^LN|1|3|||||F
OBX|5|CE|30956-7^vaccine type^LN|2|10^IPV^CVX |||||F
OBX|6|CE|59779-9^Immunization Schedule
used^LN|2|VXC16^ACIP^CDCPHINVS|||||F|||200901031
OBX|7|NM|30973-2^dose number in series^LN|2|1|||||F
OBX|8|NM|59782-3^number of doses in series^LN|2|4|||||F
OBX|9|CE|30956-7^vaccine type^LN|3|20^DTAP^CVX |||||F

OBX|10|CE|59779-9^Immunization Schedule
used^LN|3|VXC16^ACIP^CDCPHINVS|||||F
OBX|11|NM|30973-2^dose number in series^LN|3|1|||||F
OBX|12|NM|59782-3^number of doses in series^LN|3|5|||||F

ORC|RE||197023^DCS|||||^Clerk^Myron|||||DCS^Dabig Clinical System^StatellS
RXA|0|1|20091031|20091031|998^no vaccine admin^CVX|999||| |||||||||NA
OBX|1|CE|30956-7^vaccine type^LN|1|31^Hep B Peds NOS^CVX |||||F
OBX|2|CE|59779-9^Immunization Schedule
used^LN|1|VXC16^ACIP^CDCPHINVS|||||F
OBX|3|DT|30980-7^Date vaccination due^LN|1|20091231|||||F