NJIIS Interface Management System
Local Implementation Guide
For HL7 2.3.1 Immunization Messaging

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1. Introduction

New Jersey Immunization Information System (NJIIS)

The New Jersey Immunization Information System (NJIIS[1]), operating since 1997, is the statewide immunization information system (IIS) serving as the official repository of immunizations administered to individuals in the state of New Jersey. Containing over 3.5 million patients, over 41 million demographic, and immunization records[2], NJIIS is a free, confidential, population-based online system that collects and consolidates immunization information into a single record to provide an accurate immunization assessment for individuals in the state of New Jersey, as well as assists communities in assessing their immunization coverage and identifying pockets of need.

Individuals born on or after January 1, 1998, are automatically enrolled in NJIIS through the electronic birth certificate (EBC) process. Individuals born before January 1, 1998 may enroll in NJIIS voluntarily by completing a NJIIS Consent to Participate form[3]. Health care providers, child care centers, schools, colleges or universities, health plans, billing and practice management vendors, state or local public health and social service programs, and agencies or designated agents thereof may participate in and enroll as authorized users of NJIIS.

New Jersey state regulation requires health care providers in the state of New Jersey who administer immunizations to children under age seven (7) to report those immunizations administered to NJIIS within thirty (30) days of the administration date. Immunizations can be reported to NJIIS via:

- Direct data entry into the NJIIS web application[1].
- Manual electronic file transfer of Health Level Seven International (HL7) 2.3.1 or 2.5.1 messages via Secure File Transfer Protocol (SFTP) or Hypertext Transfer Protocol Secure (HTTPS) (also herein referred to as File Upload).
- Submission of HL7 2.5.1 messages utilizing the NJIIS HL7 web service.

Additional information on NJIIIS can be found on the NJIIS website[1].

NJIIS Interface Management System (IMS)

The NJIIS Interface Management System (IMS) is the system which processes the supported HL7 message types, described in Chapter 2 of this Local Implementation Guide (Local IG), to enable interoperability between NJIIS and data exchange partners. Data exchange partners wishing to exchange HL7 data with NJIIS are herein referred to as HL7 Data Exchange Partners.

[1] https://njiis.nj.gov/njiis/index.htm
[2] As of June 2014
[3] http://www.state.nj.us/health/forms/imm-32.pdf

HL7 Data Exchange Partners can interface with the NJIIS IMS via the interface type selected upon Interface Enrollment. For more information on Interface Enrollment and how to establish and interface with NJIIS, see Getting Started: How to Establish an HL7 Interface with NJIIS[4].

HL7 Data Exchange Partners can interface with the NJIIS IMS via one of the following three interface types (i.e., methods):

- **File Upload**: A method of manually uploading immunization data files via the NJIIS website.
- **SFTP**: An internet-accessible SFTP/SSH2 server for secure drop off and pickup of data files. Upon authentication, with a public key, the provider's SFTP client connects to a private directory.
- **Web Services**: A software system designed to support interoperable machine-to-machine interaction over a network; HL7 version 2.5.1 is the minimum required standard for using the NJIIS HL7 web service, a bi-directional web service.

HL7 Data Exchange Partners using the File Upload or SFTP interface type will be provided a CrushFTP account to upload Quality Assurance (QA) data to the NJIIS Test Environment.

HL7 Data Exchange Partners using the Web Services interface type must access the NJIIS HL7 web service to submit QA data to the NJIIS Test Environment. To access the NJIIS HL7 web service, HL7 Data Exchange Partners must access a Simple Object Access Protocol (SOAP) web services site and use a Web Services Definition Language (WSDL). This is a machine-readable contract detailing how HL7 Data Exchange Partners and the NJIIS IMS will communicate.

The NJIIS HL7 web service WSDL is accessible in the:

- NJIIS Test Environment at: https://njiis-train.doh.state.nj.us/ims/service
- NJIIS Production Environment at: https://njiis.nj.gov/ims/service

[4] https://njiis.nj.gov/docs/interfaces/NJIIS_Get_Start_InterfaceDoc.pdf

HL7 Implementation Guides

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

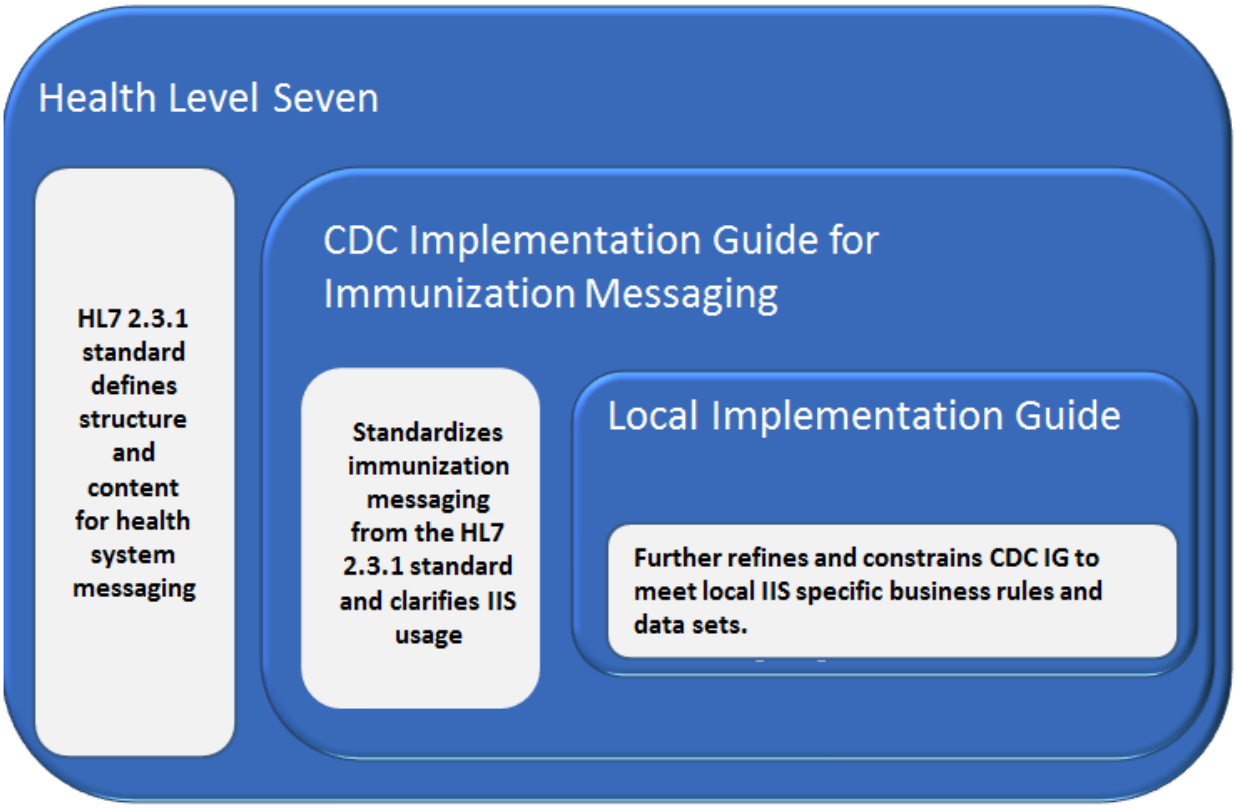


Figure 1: HL7 Controlling Document Hierarchy

The first document is the HL7 2.3.1 standard developed by Health Level Seven, a not-for-profit American National Standards Institute (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 Centers for Disease Control and Prevention's (CDC) **HL7 2.3.1 Implementation Guide for Immunization Messaging, Release 2.2** (CDC IG). This guide gives specific instructions regarding how to report to IIS, but still leaves some implementation decisions to each IIS. This guide and other technical information can be obtained from the CDC website at: http://www.cdc.gov/vaccines/programs/iis/technical-guidance/hl7.html.

The third document is this document. It finalizes all implementation decisions and defines exactly what the NJIIS IMS Interface will and will not accept. It is written in accordance with the standards set in the first two documents. This Local IG has taken great care to point out differences from the CDC IG by adding additional columns to the tables. In cases where this guide differs from the CDC IG, this guide will provide both the CDC IG column followed by the local usage specification. This effort will prove highly useful in the larger interoperability effort for Electronic Health Record (EHR) Systems, Indian Health Services, and any other electronic exchange that may span multiple IIS. Providing this information will allow the HL7 Data Exchange Partners to accurately compare the CDC IG with a Local IG, and compare differences between two different Local IGs, making it much easier to do so than in the past.

Intended Audience

This Local IG is intended for technical groups (e.g., vendors/integrators, providers/health systems, etc.) from IIS and EHR Systems that must implement these guidelines. The reader of this Local IG should have a solid HL7 foundation and be very familiar with the contents of the CDC IG. CDC IG provides HL7 foundational concepts and sets the stage for this Local IG. The goal of this Local IG is to provide an unambiguous specification for creating and interpreting messages.

Scope

The scope of this document is to clearly define the HL7 2.3.1 immunization messages supported by the NJIIS IMS. This document does not provide background on HL7 2.3.1 or the CDC HL7 2.3.1 Implementation Guide for Immunization Messaging (details can be found here: http://www.cdc.gov/vaccines/programs/iis/technical-guidance/hl7.html).

2. Supported HL7 Message Types

The NJIIS IMS supports one message type: Unsolicited Vaccination Update (VXU) and its corresponding response message: Message Acknowledgement (ACK).

The VXU is used by HL7 Data Exchange Partners to send client data and immunizations to NJIIS. The corresponding ACK is used by the NJIIS IMS to acknowledge to the HL7 Data Exchange Partner the results of the NJIIS IMS efforts to process the VXU.

It is important to understand some basic concepts, which are used throughout tables in this document. For more in-depth details, please refer to the CDC IG.

Table 2-1: Basic Concepts

Concept	Information
[XYZ]	Square Brackets enclose optional segments.
{XYZ}	Curly Braces enclose segments which can be repeated.
[{XYZ}]	Defines an optional segment which can be repeated.
Optionality/Usage	*R – Required* • These are required to message with the IIS. *RE – Required but may be empty* • The sending system SHALL populate RE elements with a non-empty value if there is relevant data. *C(a/b) – Conditional* • If the conditional predicate is true, the sending system must adhere to the usage defined by the "a" half of the conditional usage where "a" shall be one of "R", "RE", "O", or "X". • If the conditional predicate is false, the sending system must adhere to the usage defined by the "b" half of the conditional usage where "b" shall be one of "R", "RE", "O", or "X". *O – Optional* • These elements are entirely optional to provide by the sending system and also optional for the IIS to process. *X – Not Supported* • These fields are not supported by the IIS. There should be no anticipation by the sending system that the IIS is consuming these elements. *I – Ignored by the NJIIS IMS* • This is a concept specific to the NJIIS IMS. A usage of "I" indicates that, while the field is "R", "RE", or "C(a/b)" per the CDC IG , the NJIIS IMS ignores the field.
Cardinality	Indicator of the minimum and maximum number of times the element may appear.

Concept	Information
	[0..0] Element never present. [0..1] Element may be omitted or exist, at most, one occurrence. [0..n] Element may be omitted or repeat up to n times. [0..*] Element may be omitted or repeat an unlimited number of times. [1..1] Element must have exactly one occurrence. [1..n] Element must appear at least once and may repeat up to n times. [1..*] Element must appear at least once and may repeat unlimited number of times. [m..n] Element must appear at least m times and may repeat up to n times.
Begin "Named" Group … End "Named" Group	Within a message type grammar table (VXU), there are groupings which may or may not be required and may or may not repeat. These groupings are further refined by the segments within the group. For example, the Order Group in the VXU grammar table is defined with a cardinality of [1..*] and an Optionality of R. This simply means that for each VXU message type, at least 1 Order Group (immunizations) must be sent and multiple Order Groups (immunizations) are allowed. Within the Order Group there are 7 segments (ORC, TQ1, TQ2, RXA, RXR, OBX, NTE) each with their own cardinality and optionality. For each Order Group (immunization) in a VXU, each segment cardinality and optionality within the grouping must be followed. Meaning, for each immunization sent within the VXU, minimally there must be at least 1 RXA.

The tables below show the segments that are used to construct each message type supported by the NJIIS IMS. Each segment is one line of text ending with the carriage return character as required by HL7. The full HL7 standard allows additional segments within these message types, but they are unused by the NJIIS IMS. In order to remain compliant with HL7, their use will not result in an error, but the NJIIS IMS will ignore the content of the additional segments. The segments that are documented here are sufficient to support the principal NJIIS IMS functions related to clients and immunizations.

VXU – Unsolicited Vaccination Update Grammar

Table 2-2: Unsolicited Vaccination Update (VXU)

Segment	Cardinality	Optionality	Comment
MSH	[1..1]	R	
[{SFT}]	[0..0]	X	

PID	[1..1]	R	
[PD1]	[0..1]	C(R/I)	• PD1 is required for new patients in NJIIS with Date of Birth < 1/1/1998. • PD1 is ignored for patients with Date of Birth >=1/1/1998.
[{NK1}]	[0..*]	RE	In an earlier version of the NJIIS IMS Local IG, NK1 was required to create new patients in NJIIS. As per this Local IG, NK1 optionality is now required but may be empty (RE).
[	[0..1]	C(R/O)	***Begin Patient Group***
PV1	[0..1]	R	• Every RXA segment in a VXU may have zero or one PV1 segment. • PV1 segment is required but may be empty (RE) if Administration Notes (RXA-9.1) is "00" (New Immunization Record). • PV1 segment is ignored if Administration Notes (RXA-9.1) is NOT "00" (New Immunization Record).
[PV2]	[0..0]	X	
]			***End Patient Group***
[GT1]	[0..0]	X	
{	[0..0]	X	***Begin Insurance Group*** The NJIIS IMS does not support this grouping.
IN1	[0..0]	X	
[IN2]	[0..0]	X	
[IN3]	[0..0]	X	
}			***End Insurance Group***
{	[1..*]	R	***Begin Order Group*** Each VXU must contain at least one Order Group.
[ORC]	[0..1]	I	
{	]0..0]	X	***Begin Timing Group*** The NJIIS IMS does not support this grouping.
[TQ1]	[0..0]	X	
[TQ2]	[0..0]	X	
}			***End Timing Group***
RXA	[1..1]	R	Each Order Group must contain one RXA.
[RXR]	[0..1]	RE	Every RXA segment in a VXU may have zero or one RXR segments.

[	[0..0]	I	***Begin Observation Group***
[OBX]	[0..0]	I	
[NTE]	[0..0]	I	
]			***End Observation Group***
}			***End Order Group***

Non-supported segments (Optionality of "X") will be ignored by the NJIIS IMS.

A usage of "I" indicates that, while the field is "R", "RE", or "C(a/b)" per the CDC IG , the NJIIS IMS ignores the field in a VXU.

ACK – Message Acknowledgement Grammar

Table 2-3: Message Acknowledgement (ACK)

Segment	Cardinality	Optionality	Comment
MSH	[1..1]	R	
[{SFT}]	[0..0]	X	
MSA	[1..1]	R	
[{ERR}]	[0..*]	RE	• If an error exists, then this segment is populated. Each error will have its own ERR segment. • This segment is also populated with the NJIIS Registry ID (if available) in its own ERR segment.

Non-supported segments (Optionality of "X") will be ignored by the NJIIS IMS.

3. HL7 Data Types

The CDC IG contains clearly defined HL7 data types that are the building blocks of an HL7 message. This guide will avoid potentially ambiguous situations and will not attempt to redefine an already clearly defined section.

4. File and Batch Segments (FHS, FTS, BHS, BTS)

If a FHS, FTS, BHS, or BTS segment is sent by the HL7 Data Exchange Partner, the entire segment will be ignored by the NJIIS IMS.

5. Unsolicited Vaccination Update (VXU)

Overview

The NJIIS IMS supports submission of VXU messages via:

- Manual electronic file transfer of HL7 2.3.1 or 2.5.1 messages via SFTP or File Upload
- Submission of HL7 2.5.1 messages utilizing the NJIIS HL7 web service

The NJIIS IMS takes as input an HL7 formatted VXU message as described in the sections below. **It is important to note that this guide describes the message formatting according to the HL7 2.3.1 standard only.**

HL7 Data Exchange Partners can utilize VXU messages to:

- Report (i.e., add) immunizations to NJIIS
- Update historical immunizations or immunizations that the partner previously reported to NJIIS
- Delete immunizations that the partner had previously reported to NJIIS

> The NJIIS IMS previously did not support requests to update previously reported immunizations. Therefore, HL7 Data Exchange Partners formerly effectively performed an "update" by sending a message that both deletes the previously reported immunization and then adds the updated immunization. Now that the NJIIS IMS supports updates to previously reported immunizations, HL7 Data Exchange Partners can denote this in the Action Code – RXA (RXA-21) field.

When the NJIIS IMS receives the VXU message, it validates the message, searches for an existing patient (if any), creates a new patient (if none exists), adds/updates/deletes any new immunization information for that patient, and ignores any duplicate immunizations. If multiple matching patients are found, this is considered a fatal error and the message will be rejected. One immunization can be added, updated, or deleted per RXA segment. Each VXU message can have multiple RXA segments. At least one valid RXA segment is required per VXU.

HL7 Data Exchange Partners must utilize the Action Code – RXA (RXA-21) field of each RXA segment to denote whether that RXA segment's immunization is being added, updated, or deleted.

Reporting Immunizations

VXU messages are most commonly used to report (i.e., add) immunizations. HL7 Data Exchange Partners must set the value of the Action Code – RXA (RXA-21) field to the HL7 code "A" (for Add) to report an immunization.

> Even if the Action Code – RXA (RXA-21) field is valued with the HL7 code "A" (for Add), if a matching immunization is found for that patient with the same vaccine, administration date, and administered-at location (RXA-11.4.1) as specified in the RXA segment, the RXA segment will be processed as an update instead of an add.
>
> Similarly, if the Action Code – RXA (RXA-21) field is valued with the HL7 code "A" (for Add), if a matching historical immunization is found for that patient with the same vaccine and administration date as specified in the RXA segment, the RXA segment will be processed as an update instead of an add.

If a matching immunization with the same vaccine, administration date, and administered-at location (RXA-11.4.1) specified in the RXA segment for the patient is NOT found, then the NJIIS IMS will add the immunization to NJIIS using the corresponding RXA segment. The exception to this rule is any new dose reported with the date of administration +/- 5 days of a dose that already exists in the system. In this case the dose will not be added.

If however, a matching immunization for the patient is found, and if that matching immunization had been previously reported by a provider having the *same* NJIIS issued Provider ID that is specified in administered- at location (RXA-11.4.1) of the VXU message, then the NJIIS IMS will instead update the immunization in NJIIS using the corresponding RXA segment.

If a matching immunization is found, but that matching immunization is a historical immunization and had been previously reported by a historical provider, then the NJIIS IMS will instead update the immunization in NJIIS using the corresponding RXA segment.

If a matching immunization is found, but that matching immunization had been previously reported by a provider that is *different* from the NJIIS issued Provider ID that is specified in the administered-at location (RXA-11.4.1) field, then the immunization will NOT be added or updated. The NJIIS IMS ignores the corresponding RXA segment but continues processing any other RXA segments that are a part of that VXU message.

Updating Previously Reported Immunizations

VXU messages can be used to request that the NJIIS IMS update historical immunizations or immunizations that the HL7 Data Exchange Partner had previously reported to NJIIS. HL7 Data Exchange Partners must set the value of the Action Code – RXA (RXA-21) field to the HL7 code "U" (for Update) to update historical immunizations or immunizations that the partner previously reported to NJIIS.

> Even if the Action Code – RXA (RXA-21) field is valued with the HL7 code "U" (for Update), if a matching immunization is NOT found for that patient with the same vaccine, administration date, and administered-at location as specified in the RXA segment, the RXA segment will be processed as an add instead of an update.

If a matching immunization for the patient is found, and if that matching immunization had been previously reported by a provider having the *same* NJIIS issued Provider ID that is specified in administered-at location (RXA-11.4.1) of the VXU message, then the NJIIS IMS will update the immunization in NJIIS using the corresponding RXA segment.

If a matching immunization is found, but that matching immunization is a historical immunization and had been previously reported by a historical provider, then the NJIIS IMS will update the immunization in NJIIS using the corresponding RXA segment.

If a matching immunization is found, but that matching immunization had been previously reported by a provider that is *different* from the NJIIS issued Provider ID that is specified in the administered-at location (RXA-11.4.1) field, then the immunization will NOT be added or updated. The NJIIS IMS ignores the corresponding RXA segment but continues processing any other RXA segments that are a part of that VXU message.

If however, a matching immunization with the same vaccine, administration date, and administered-at location (RXA-11.4.1) specified in the RXA segment for the patient is NOT found, then the NJIIS IMS will instead add the immunization to NJIIS using the corresponding RXA segment.

Deleting Previously Reported Immunizations

VXU messages can be used to request that the NJIIS IMS delete immunizations that the HL7 Data Exchange Partner had previously reported to NJIIS. HL7 Data Exchange Partners must set the value of the Action Code – RXA (RXA-21) field to the HL7 code "D" (for Delete) to request that the NJIIS IMS delete a previously reported immunization that matches the patient, the administered-at location, the vaccine, and the administration date specified by the RXA segment.

If a matching immunization is found, and if that matching immunization had been previously reported by a provider having the *same* NJIIS issued Provider ID that is specified in the administered-at location (RXA-11.4.1) of the VXU message, then the NJIIS IMS will delete the immunization from NJIIS.

If a matching immunization is found, but that matching immunization had been previously reported by a provider that is *different* from the NJIIS issued Provider ID that is specified in the administered-at location (RXA-11.4.1) field, then the immunization will not be deleted. The NJIIS IMS ignores the corresponding RXA segment but continues processing any other RXA segments that are a part of that VXU message.

If a matching immunization is NOT found, then the NJIIS ignores the corresponding RXA segment but continues processing any other RXA segments that are a part of that VXU message.

VXU Message Segments

MSH – Message Header Segment

MSH is a required segment in a VXU message.

Table 5-1 Message Header Segment (MSH)

SEQ	Element Name	Data Type	Value Set	CDC IG Cardinality	NJIIS IMS Cardinality	CDC IG Usage	NJIIS IMS Usage	Conditional Predicate
1	Field Separator	ST	---	[1..1]	[1..1]	R	R	
2	Encoding Characters	ST	---	[1..1]	[1..1]	R	R	
3	Sending Application	HD	0361	[0..1]	[1..1]	O	R	
4	Sending Facility	HD	0362	[0..1]	[1..1]	O	R	
5	Receiving Application	HD	0361	[0..1]	[0..1]	O	O	
6	Receiving Facility	HD	0362	[0..1]	[0..1]	O	O	
7	Date/Time Of Message	TS	---	[0..1]	[1..1]	O	O	
8	Security	ST	---	[0..1]	[0..0]	O	X	
9	Message Type	CM	---	[1..1]	[1..1]	R	R	
10	Message Control ID	ST	---	[1..1]	[1..1]	R	R	
11	Processing ID	PT	0103	[1..1]	[1..1]	R	R	
12	Version ID	VID	---	[1..1]	[1..1]	R	R	
13	Sequence Number	NM	---	[0..1]	[0..0]	O	X	
14	Continuation Pointer	ST	---	[0..1]	[0..0]	O	X	
15	Accept Acknowledgement Type	ID	0155	[0..1]	[0..1]	O	X	
16	Application Acknowledgment Type	ID	0155	[0..1]	[0..1]	O	X	
17	Country Code	ID	---	[0..1]	[0..0]	O	X	
18	Character Set	ID	---	[0..*]	[0..0]	O	X	
19	Principal Language Of Message	CE	---	[0..1]	[0..0]	O	X	
20	Alternate Character Set Handling Scheme	ID	---	[0..1]	[0..0]	O	X	
21	Message Profile Identifier	EI	---	[0..*]	[0..*]	X	X	

Non-supported segments (Optionality of "X") will be ignored by the NJIIS IMS. All other fields are described in the Field Usage Notes that follow.

A usage of "I" indicates that, while the field is "R", "RE", or "C(a/b)" per the CDC IG , the NJIIS IMS ignores the field in a VXU.

MSH Field Usage Notes

MSH-1 Field Separator (ST)

This field contains the separator between the segment ID and the first real field, Encoding Characters (MSH-2). As such it serves as the separator and defines the character to be used as a separator for the rest of the message. **This is a required field. Required value is |** (ASCII 124).

Example:
MSH|
↑

MSH-2 Encoding Characters (ST)

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

Special characters that are utilized within HL7 messages as separators (also referred to as delimiters) should not be included within those same HL7 messages as data because their presence would interfere with the parsing of the message. If an HL7 message does contain one of these special delimiter characters as part of the message content (e.g., an ampersand as part of an address: "Apt. A & B"), then the HL7 Data Exchange Partner must utilize a special escape sequence to indicate that the character is a text character and not a delimiter content (e.g., "Apt. A\T\B" to represent "Apt. A & B"); otherwise, the NJIIS IMS cannot distinguish between the delimiter character and a character that is part of the text.

In order to include any one of these special characters as data within an HL7 message, those characters must be converted into a predefined sequence of characters that begin and end with the escape character "\". HL7 Data Exchange Partners should utilize the following table to convert special characters into escape sequences when creating messages *sent to* the NJIIS IMS and to convert escape sequences to special characters when parsing messages *coming from* the NJIIS IMS.

Special Character Description	Special Character	Escape Sequence
Escape character	\	\E\
Field separator	|	\F\
Repetition separator	~	\R\
Component separator	^	\S\
Subcomponent separator	&	\T\

MSH-3 Sending Application (HD)

This field uniquely identifies the sending application. This is not the product, but rather the name of the specific instance. **This is a required field.**

Previous guidance provided in the "NJIIS Interface Specifications for HL7 Message Types" document indicated valuing MSH-3 with the vendor name. However, as per this Local IG, MSH-3 must instead be valued with the sending software application's name and software version in the MSH-3.1 component.

The HL7 Data Exchange Partner must value MSH-3.1 with the sending software application's name and software version. The NJIIS IMS will not maintain a list of sending application names.

Example:
MSH|^~\&|**My EHR 1.0**|

MSH-4 Sending Facility (HD)

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

The HL7 Data Exchange Partner must value MSH-4.1 with the NJIIS Provider ID issued by NJIIS. The value in MSH-4.1 must be the same as the NJIIS Provider ID associated with the HL7 Data Exchange Partner's Interface Profile sending the message.

The NJIIS IMS will not maintain a list of facilities/Provider IDs and, therefore, will not limit MSH-4.1 values. However, if the NJIIS Provider ID supplied in MSH-4.1 is not valid or does not match the NJIIS Provider ID that is associated with the Interface Profile sending the message, it will be considered a fatal error.

Example:
|**325**|

When Administration Notes (RXA-9.1) is valued with "00" (New immunization record), the NJIIS Provider ID valued in MSH-4.1 must be the same as the NJIIS Provider ID valued in Administered-at Location (RXA-11.4.1); otherwise it will be considered a fatal error.

In the case described above, the Patient's Primary Provider in NJIIS will always be set using the NJIIS Provider ID specified in Administered-at Location (RXA-11.4.1), unless:

- The NJIIS Provider ID valued in MSH-4.1 is associated with a Pharmacy; thereby the Patient's Primary Provider in NJIIS will NOT be set.
- The corresponding Vaccines Administered (CVX) code valued in Administered Code (RXA-5) is a CVX code for an influenza vaccine; thereby the Patient's Primary Provider in NJIIS will NOT be set.

MSH-5 Receiving Application (HD)

This field uniquely identifies the receiving application. This is not the product, but rather the name of the specific instance.

The HL7 Data Exchange Partner should value MSH-5.1 with the receiving application's name.

When sending a VXU, **MSH-5.1 should contain:** |**NJIIS**|

MSH-6 Receiving Facility (HD)

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

The HL7 Data Exchange Partner should value MSH-6.1 with the organization responsible for the operations of the receiving application.

When sending a VXU, **MSH-6.1 should contain:** |**NJDOH**|

MSH-7 Date/Time Of Message (TS)

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

The degree of precision should be to the second. The time zone must be specified and will be used throughout the message as the default time zone. When the time zone is not included, it is presumed to be the time zone of the sender.

The expected format is YYYYMMDDHHMMSS.

Milliseconds and Time zone values are Optional.

For example, formats including milliseconds and time zones are:

YYYYMMDDHHMMSS.SSSS or YYYYMMDDHHMMSS.SSSS+/-ZZZZ.

Example:
|**20120204030159**|
This represents February 4, 2012 at 3:01:59.

Additional precision as specified in the Date/Time (DTM) HL7 data type, if sent, will be accepted. If the Date/Time of Message is not sent or is invalid (i.e., not a valid date or not in the correct format), a fatal error will be reported.

MSH-9 Message Type (MSG)

This field contains the message type, trigger event, and message structure ID for the message. **This is a required field. The first two components are required.**

When sending a VXU, **MSH-9 must contain:** |**VXU^V04**|

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

- **MSH-9.1** Message Type with **VXU**
- **MSH-9.2** Trigger Event with **V04**

The HL7 Data Exchange Partner may value the following components

- **MSH-9.3** Message Structure ID with **VXU_V04**

If MSH-9 is not valued or is valued with a value other than the expected message type and trigger event, the message cannot be parsed and, therefore, will be rejected as an improperly formatted message.

> The third component, message structure ID (MSH-9.3) is not required in HL7 version 2.3.1; however, it is required by the CDC IG for HL7 version 2.5.1.

MSH-10 Message Control ID (ST)

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

The NJIIS IMS will echo this ID back to the HL7 Data Exchange Partner in the Message Acknowledgment Segment (MSA) of the ACK response message. The content and format of the data sent in this field is the responsibility of the HL7 Data Exchange Partner.

MSH-11 Processing ID (PT)

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

Refer to HL7-defined Table 0103 – Processing ID in Appendix A of this document for values supported by the NJIIS IMS.

The HL7 Data Exchange Partner must value MSH-11 with either:

- "P" for Production
- "T" for Training or for when testing

All other values will be considered a fatal error. In addition, if "T" is sent for a Production message, it will be considered a fatal error.

If MSH-11 is valued with "T", any initial Test VXU messages **to satisfy Phase 1 of the NJIIS Interface Enrollment process, MUST only include dummy data.**

If MSH-11 is valued with "T", any subsequent Test VXU messages submitted to the NJIIS Test Environment, **to satisfy Phase 2 of the NJIIS Interface Enrollment process' data quality review, should include production data.**

If MSH-11 is valued with "P", any Production VXU messages submitted **to the NJIIS Production Environment MUST only include production data.**

MSH-12 Version ID (VID)

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

Only the first component needs to be populated. **When sending a 2.3.1 message, MSH-12 must contain: |2.3.1|**

The only versions of HL7 the NJIIS IMS officially supports are 2.3.1 and 2.5.1.

MSH-15 Accept Acknowledgment Type (ID)

This field identifies the conditions under which accept acknowledgments are required to be returned in response to this message. Required for enhanced acknowledgment mode. Refer to HL7-defined Table 0155 – Accept/Application Acknowledgment Conditions in Appendix A of this document for values supported by the NJIIS IMS.

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

When sending a VXU, if valued, MSH-15 should contain: |NE|

While this field has a usage of "O" per the CDC IG whereby the HL7 Data Exchange Partner may value this field if there is relevant data, the NJIIS IMS ignores this field if valued. The NJIIS IMS never sends an accept acknowledgement when the message is received; it only sends an application acknowledgement once it has processed the message.

MSH-16 Application Acknowledgment Type (ID)

This field contains the conditions under which application acknowledgments are required to be returned in response to this message. Required for enhanced acknowledgment mode. Refer to HL7-defined Table 0155 – Accept/Application Acknowledgment Conditions in Appendix A of this document for values supported by the NJIIS IMS.

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

When sending a VXU, if valued, MSH-16 should contain: |AL|

While this field has a usage of "RE" per the CDC IG whereby the HL7 Data Exchange Partner should value this field if there is relevant data, the NJIIS IMS ignores this field if valued. The NJIIS IMS will always send an acknowledgement once it has processed an HL7 2.5.1 VXU message.

MSH-21 Message Profile Identifier (EI)

This field may be used to assert adherence to, or reference, a message profile. Message profiles contain detailed explanations of grammar, syntax, and usage for a particular message or set of messages. This field will be required whenever a profile is being used to constrain the message.

While this field has a usage of "C(R/O)" per the CDC IG for QBP and RSP message types, the NJIIS IMS ignores this field in VXU messages.

SFT – Software Segment

If present, the entire SFT segment is ignored by the NJIIS IMS.

PID – Patient Identifier Segment

PID is a required segment in a VXU message.

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

Table 5-2 Patient Identifier Segment (PID)

SEQ	Element Name	Data Type	Value Set	CDC IG Cardinality	NJIIS IMS Cardinality	CDC IG Usage	NJIIS IMS Usage	Conditional Predicate
1	Set ID - PID	SI	---	[0..1]	[0..1]	O	O	
2	Patient ID	CX	---	[0..1]	[0..0]	X	X	
3	Patient Identifier List	CX	---	[1..*]	[1..*]	R	O	
4	Alternate Patient ID	CX	---	[0..*]	[0..0]	X	I	
5	Patient Name	XPN	---	[1..*]	[1..*]	R	R	
6	Mother's Maiden Name	XPN	---	[0..*]	[0..1]	O	RE	
7	Date/Time of Birth	TS	---	[0..1]	[1..1]	O	R	
8	Administrative Sex	IS	0001	[0..1]	[1..1]	O	R	
9	Patient Alias	XPN	---	[0..*]	[0..0]	O	I	
10	Race	CE	0005	[0..*]	[0..*]	O	RE	
11	Patient Address	XAD	---	[0..*]	[1..*]	O	R	
12	County Code	IS	---	[0..1]	[0..0]	B	I	
13	Phone Number - Home	XTN	---	[0..*]	[0..*]	O	RE	
14	Phone Number - Business	XTN	---	[0..*]	[0..*]	O	O	
15	Primary Language	CE	0296	[0..1]	[0..1]	O	O	
16	Marital Status	CE	---	[0..1]	[0..0]	O	X	
17	Religion	CE	0006	[0..1]	[0..0]	O	X	
18	Patient Account Number	CX	---	[0..1]	[0..0]	O	X	
19	SSN Number - Patient	ST	---	[0..1]	[0..0]	B	X	
20	Driver's License Number - Patient	DLN		[0..0]	[0..0]	X	X	
21	Mother's Identifier	CX	---	[0..*]	[0..0]	O	X	
22	Ethnic Group	CE	0189	[0..*]	[0..1]	O	RE	
23	Birth Place	ST	---	[0..1]	[0..0]	O	X	
24	Multiple Birth Indicator	ID	0136	[0..1]	[0..1]	O	RE	
25	Birth Order	NM		[0..1]	[0..1]	C(RE/O)	C(RE/X)	If PID-24 is valued "Y"
26	Citizenship	CE	---	[0..*]	[0..0]	O	O	
27	Veterans Military Status	CE	---	[0..1]	[0..0]	O	O	
28	Nationality	CE	---	[0..1]	[0..0]	O	O	

SEQ	Element Name	Data Type	Value Set	CDC IG Cardinality	NJIIS IMS Cardinality	CDC IG Usage	NJIIS IMS Usage	Conditional Predicate
29	Patient Death Date and Time	TS	---	[0..1]	[0..1]	O	O	
30	Patient Death Indicator	ID	---	[0..1]	[0..1]	O	O	
31	Identity Unknown Indicator	ID	---	[0..1]	[0..0]	X	X	
32	Identity Reliability Code	IS	---	[0..1]	[0..0]	X	X	
33	Last Update Date/Time	TS	---	[0..1]	[0..0]	X	X	
34	Last Update Facility	HD	---	[0..1]	[0..0]	X	X	
35	Species Code	CE	---	[0..1]	[0..0]	X	X	
36	Breed Code	CE	---	[0..1]	[0..0]	X	X	
37	Strain	ST	---	[0..1]	[0..0]	X	X	
38	Production Class Code	CE	---	[0..1]	[0..0]	X	X	
39	Tribal Citizenship	CWE	---	[0..1]	[0..0]	X	X	

Non-supported segments (Optionality of "X") will be ignored by the NJIIS IMS. All other fields are described in the Field Usage Notes that follow.

A usage of "I" indicates that, while the field is "R", "RE", or "C(a/b)" per the CDC IG , the NJIIS IMS ignores the field in a VXU.

PID Field Usage Notes

PID-1 Set ID - PID (SI)

This field contains the number that identifies this transaction. For the first occurrence of the segment, the sequence number shall be one, for the second occurrence, the sequence number shall be two, etc. Every VXU can only have one PID segment, so for a VXU, this should always be 1.

When sending a VXU, **PID-1 should contain:** |**1**|

PID-3 Patient Identifier List (CX)

This field contains the list of identifiers (one or more) used by the healthcare facility to uniquely identify a patient. **This is a required field.**

At least one NJIIS supported, properly formatted patient identifier must be submitted.

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

- PID-3.1 with the ID Number.
- PID-3.4.1 with the Assigning Authority.

- PID-3.5 with the Identifier Type Code.

Example:
|12345^^^325^MR~202729^^^NJIIS^SR|

This represents a list of two identifiers:

- Medical Record Number "12345" with Assigning Authority "325" which is the NJIIS Provider ID of the Assigning Authority.
- NJIIS Registry ID (State Registry ID) "202729" with Assigning Authority "NJIIS".

It is strongly recommended that HL7 Data Exchange Partners include at least one of the following NJIIS supported patient identifiers, preferably the NJIIS Registry ID, in their VXU messages because it will significantly decrease the time that it takes for the NJIIS IMS to process and respond to the messages, as well as increase the likelihood that a patient match will be found:

- SR (for State Registry ID)
- MR (for Medical Record Number)

The State Registry ID is used to communicate the NJIIS unique identifier (NJIIS Registry ID) for the patient. The NJIIS IMS will transmit the NJIIS Registry ID back to the HL7 Data Exchange Partner in a Message Acknowledgement (ACK) message. When returning an ACK message in response to a VXU message, the NJIIS IMS will return the NJIIS Registry ID in the Patient Identifier List (PID-3) field.

The HL7 Data Exchange Partner should store the State Registry ID with their patient records and include that identifier in subsequent VXU messages. Including the State Registry ID in subsequent VXU messages ensures accurate patient matching in NJIIS

The NJIIS IMS does not support the full data set of identifiers; for example, Social Security Number (SS) and Person Number (PN) are currently not supported. Refer to User-defined Table 0203 – Identifier Type in Appendix A of this document for values supported by the NJIIS IMS. Unsupported identifiers will be ignored.

Additional rules are as follows:

- When valuing the ID Number (PID-3.1) with a State Registry ID, the Assigning Authority (PID-3.4.1) must be valued with an NJIIS supported value in User-defined Table 0363 – Assigning Authority in Appendix A of this document.

- Currently, the only State Registry ID that is supported is the NJIIS Registry ID, and therefore Assigning Authority (PID-3.4.1) must be valued with "NJIIS" if sending a NJIIS Registry ID in the ID Number (PID-3.1).
- Unsupported Assigning Authorities will be ignored.

- When valuing the ID Number (PID-3.1) with a Medical Record Number, the Assigning Authority (PID-3.4.1) must be valued with a NJIIS Provider ID issued by NJIIS. The NJIIS IMS will not maintain a list of Provider IDs for use in User-defined Table 0363 – Assigning Authority in Appendix A of this document.
- If Assigning Authority (PID-3.4.1) is valued with "NJIIS", the ID Number (PID-3.1) must be valued with a valid NJIIS Registry ID and Identifier Type Code (PID-3.5) must be valued with "SR", otherwise it will be reported as a non-fatal error and the identifier disregarded.
- If multiple identifiers of the same type are sent (e.g., multiple Medical Record Numbers), only the first occurrence of the identifier of that type (e.g., the first occurrence of Medical Record Number) will be processed. Other identifiers of that same type will be ignored.
- Each of the NJIIS supported patient identifiers must adhere to the following:
  - The State Registry ID must be digits and cannot exceed 12 digits.
  - The Medical Record Number cannot exceed 20 characters.
- If there are multiple identifiers, at least one identifier must not exceed the character limit, must be formatted correctly, and must include the required components; otherwise it will be considered a fatal error. *For all other identifiers*:
  - If a required component is missing, it will be reported as a non-fatal error and the identifier disregarded.
  - If the identifier exceeds the character limit or is formatted incorrectly, it will be reported as a non-fatal error and the identifier disregarded.

PID-5 Patient Name (XPN)

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

The primary or legal name of the patient must be reported first. The NJIIS IMS will only process the Patient Name sent in the first occurrence in a list of repeating Patient Names; all other Patient Names will be ignored. For the Patient Name sent in the first occurrence, the Name Type Code specified in PID-5.7 must be set to "L" for Legal Name; if it is omitted or other than "L" for Legal Name, it will be treated as if "L" was sent and a non-fatal error reported. Refer to HL7-defined Table 0200 – Name Type in Appendix A of this document for values supported by the NJIIS IMS.

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

- PID-5.1.1 with the Surname (i.e., Last Name)

- PID-5.2 with the Given Name (i.e., First Name)

The HL7 Data Exchange Partner should value the following components:

- PID-5.7 with the Name Type Code of "L"

Example:
|**Smith^Joey^Milo^^^^L**|

Additional rules are as follows:

- The First Name, Last Name, and Middle Name must each be 30 characters or less; otherwise it will be truncated and no error will be reported.
- If PID-5.1.1 and PID-5.2 are omitted, it will be considered a fatal error.
- If there is relevant data, PID-5.3 should be valued with the Patient Second and Further Given Names or Initials Thereof (i.e., Middle Name).
    - If PID-5.3 is included, the NJIIS IMS will only process the Middle Name sent in the first occurrence; all other Middle Names will be ignored.
- For the Patient Name sent in the first occurrence, PID-5.7 must be valued with the Name Type Code of "L"; if it is omitted or other than "L" for Legal Name, it will be treated as if "L" was sent and a non-fatal error reported.
- Suffix (PID-5.4) and Prefix (PID-5.5) are optional. All other PID-5 components not described in this field usage note, if provided, will be ignored.

PID-6 Mother's Maiden Name (XPN)

This field contains the family name under which the mother was born (i.e., before marriage) and should be sent if there is relevant data. It is used to distinguish between patients with the same last name. The Name Type Code specified in PID-6.7 should be set to "M" for Maiden Name. Refer to HL7-defined Table 0200 – Name Type in Appendix A of this document for values supported by the NJIIS IMS.

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

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

The HL7 Data Exchange Partner should value the following components:

- PID-6.7 with the Name Type Code of "M"

Example:
|**Doe^Jane^^^^^M**|

Additional rules are as follows:

- The Surname (i.e., Last Name) (PID-6.1.1) and Given Name (i.e., First Name) (PID-6.2) must be 30 characters or less; otherwise it will be truncated and no error will be reported.
- If PID-6.1.1 and PID-6.2 are omitted, it will be considered a fatal error.
- If Name Type Code (PID-6.7) is omitted or contains a value other than "M", the name in PID-6 will still be considered the maiden name of the patient's mother (i.e., PID-6.7 treated as if "M" was sent) and no error will be reported.
- All other PID-6 components, if provided, will be ignored.

PID-7 Date/Time of Birth (TS)

This field contains the patient's date and time of birth. **This is a required field.**

The date must be in the YYYYMMDD format; otherwise it will be considered a fatal error. The time component of the HL7 Data Type will be ignored if it is provided.

Example:
|**20080423**|
This represents a date of birth on April 23, 2008.

Additional date validation rules for Patient's date of birth (DOB) include the following:

- The Patient's DOB must be on or before the current date.
- The Immunization Date (i.e., Date/Time Start of Administration (RXA-3)) must be on or after the Patient's DOB.
- The Patient's DOB must be less than 120 years in the past.

Violation of the above validation rules will also be considered a fatal error.

PID-8 Administrative Sex (IS)

This field contains the patient's sex. **This is a required field.**

The NJIIS IMS supports all of the values listed in the CDC IG's HL7-defined Table 0001 – Administrative Sex. If PID-8 is not valued or contains a value other than "M", "F", or "U", this will be considered a fatal error.

PID-10 Race (CE)

This field refers to the patient's race and should be sent if there is relevant data. The NJIIS IMS will process the first occurrence of Race in a list of repeating Races; all others will be ignored.

The NJIIS IMS supports all of the U.S. Race Code values listed in the CDC IG's HL7-defined Table 0005 – Race. All other values will be ignored, and the VXU message processed as if PID-10 was not valued. The NJIIS IMS does not support NIP alpha race codes, and if sent, they will be ignored.

While the NJIIS IMS does not support NIP alpha race codes, if however, *both* alpha and numeric codes are sent, per the CDC IG, the second triplet of the CE data type for race should be used for the governmentally assigned numeric codes (####-#) as the first triplet is reserved for use (backward compatibility) of NIP alpha race codes. If *only* the numeric U.S. Race Code is sent, it should be sent in the first triplet since the first component and third component of the CE data type are required as per the CDC IG. When sending the U.S. Race Code, the third component of the triplet it is sent in must be "HL70005".

Example:
|**2106-3^White^HL70005**| - or - |W^White^NIP^**2106-3^White^HL70005**|

PID-11 Patient Address (XAD)

This field contains the address of the patient. Refer to HL7-defined Table 0190 – Address Type in Appendix A of this document for values supported by the NJIIS IMS. **This is a required field.**

For the address sent in the first occurrence, if any PID-11 component is valued, then all of the following required components must be valued, otherwise, it will be considered a fatal error:

- PID-11.1.1 with Street Address
- PID-11.3 with City
- PID-11.4 with State
- PID-11.5 with Zip
- PID-11.7 with Address Type

The HL7 Data Exchange Partner should value the following components, if there is relevant data:

- PID-11.2 with Other Designation (i.e., "Street Address 2" such as apartment or suite number).
- PID-11.6 with Country.

Example:
|**123 Anywhere St&Anywhere St&123^Apt 5A^Trenton^NJ^12345^USA^L**|

This represents a legal address: 123 Anywhere St, Apt 5A, Trenton, NJ, 12345, USA

Additional rules are as follows:

- Street Address (PID-11.1.1) should contain Dwelling (i.e., House) Number in the beginning of the field followed by the Street Name. The value cannot exceed 50 characters; otherwise it will be truncated.

        - If PID-11.1.1 is valued, then Street Name (PID-11.1.2) and Dwelling Number (PID-11.1.3) should also be valued. PID-11.1.2 and PID-11.1.3 are optional; however, valuing these components will aid in data quality.
        - If the values in PID-11.1.2 and PID-11.1.3 do not correspond to the value in PID-11.1.1, the NJIIS IMS will process PID-11.1.1 and ignore PID-11.1.2 and PID-11.1.3.
- If there is relevant data, Other Designation (PID-11.2) should contain the "Street Address 2" (e.g., apartment or suite number). The value cannot exceed 50 characters; otherwise it will be truncated.
- City (PID-11.3) cannot exceed 34 characters; otherwise it will be truncated.
- State (PID-11.4) must be a valid State Code and cannot exceed 2 characters; otherwise, it will be considered a fatal error.
- Zip (PID-11.5):
    - The NJIIS IMS only supports a 5 digit Zip code format (#####).
    - Must be exactly 5 digits; otherwise it will be considered a fatal error.
    - Cannot exceed 5 digits; otherwise Zip will be truncated and only the first 5 digits of the Zip will be processed; no error will be reported. If the first 5 are NOT digits, it will be considered a fatal error.
- County (PID-11.9) is optional. All other PID-11 components, if provided, will be ignored.

PID-13 Phone Number - Home (XTN)

This field contains the patient's personal phone numbers and should be sent if there is relevant data. All personal phone numbers for the patient are sent in the following order. The first occurrence is considered the primary number (for backward compatibility). If the primary number is not sent, then a repeat delimiter is sent in the first occurrence. Each type of telecommunication shall be in its own repetition. For example, if a person has a phone number and an email address, they shall each have a repetition. Refer to HL7-defined Table 0201 – Telecommunication Use Code and HL7-defined Table 0202 – Telecommunication Equipment Type of this document for values supported by the NJIIS IMS. They are also listed below for convenience.

Multiple phone numbers for the same person may be sent and must include an NJIIS Supported Telecommunication Use Code and should include Telecommunication Equipment Type.

NJIIS Supported Telecommunication Use Codes:

- "PRN" for Primary Residence Number
- "ORN" for Other Residence Number
- "NET" for Network (Email) Address

NJIIS Supported Telecommunication Equipment Types:

- "PH" for Telephone
- "CP" for Cellular Phone
- "X.400" for X.400 Email Address. Use only if Telecommunication Use Code is "NET".

If any PID-13 component is valued, then all of the following required components must be valued, otherwise, it will be reported as a non-fatal error and the phone number will be disregarded:

- PID-13.2 with Telecommunication Use Code
- PID-13.4 with Email Address, if PID-13.2 is "NET"
- PID-13.6 with Area Code, if PID-13.2 is "PRN" or "ORN"
- PID-13.7 with Local Number, if PID-13.2 is "PRN" or "ORN"

The HL7 Data Exchange Partner should value the following components, if there is relevant data:

- PID-13.3 with Telecommunication Equipment Type

Example:
|^PRN^PH^^^609^5551212~^ORN^CP^^^732^5551212~^NET^X.400^joey.smith@fakeemail.com|

This represents a list of 2 phone numbers and an email address:

- The first is a primary residence number: (609) 555-1212
- The second is a cell phone number: (732) 555-1212
- The third is an email address: joey.smith@fakeemail.com

Additional rules are as follows:

- Any Telecommunication Use Code and Telecommunication Equipment Type that is NOT supported by the NJIIS IMS will be ignored and no error will be reported.
- If multiple phone numbers or emails with the same Telecommunication Use Code are sent, the NJIIS IMS will only process the first occurrence of the phone number or email with that Telecommunication Use Code; all other phone numbers or emails with that Telecommunication Use Code will be disregarded and it will be reported as a non-fatal error.
- If PID-13.4 is not in email address format, it will be reported as a non-fatal error and the email address will be disregarded.
- If PID-13.6 is not 3 digits and if PID-13.7 is not 7 digits, it will be reported as a non-fatal error and the phone number will be disregarded.
- Extension (PID-13.8) is optional. All other PID-13 components not described in this field usage note, if provided, will be ignored.

PID-14 Phone Number - Business (XTN)

This field contains the patient's business telephone numbers. All business numbers for the patient are sent in the following order. The first occurrence is considered the patient's primary business number (for backward compatibility). If the primary business phone number is not sent, then a repeat delimiter is sent in the first occurrence. Each type of telecommunication shall be in its own repetition. For example, if a person has a business phone number and a business email address, they shall each have a repetition. Refer to HL7-defined Table 0201 – Telecommunication Use Code and HL7-defined Table 0202 – Telecommunication Equipment Type in Appendix A of this document for values supported by the NJIIS IMS. They are also listed below for convenience.

A business phone number and business email address for the same person may be sent and must include a NJIIS Supported Telecommunication Use Code and should include Telecommunication Equipment Type.

NJIIS Supported Telecommunication Use Codes:

- "WPN" for Work Number
- "NET" for Network (Email) Address

NJIIS Supported Telecommunication Equipment Types:

- "PH" for Telephone
- "CP" for Cellular Phone
- "X.400" for X.400 Email Address. Use only if Telecommunication Use Code is "NET".

If any PID-14 component is valued, then all of the following required components must be valued, otherwise, it will be reported as a non-fatal error and the business phone number will be disregarded:

- PID-14.2 with Telecommunication Use Code
- PID-14.4 with Email Address, if PID-14.2 is "NET"
- PID-14.6 with Area Code, if PID-14.2 is "WPN"
- PID-14.7 with Local Number, if PID-14.2 is "WPN"

The HL7 Data Exchange Partner should value the following components, if there is relevant data:

- PID-14.3 with Telecommunication Equipment Type

Example:
|^WPN^PH^^^908^5551212~^NET^X.400^jsmith@fakeworkemail.com|

This represents a phone number and an email address:

- The first is a work number: (908) 555-1212

- The second is an email address: jsmith@fakeworkemail.com

Additional rules are as follows:

- Any Telecommunication Use Code and Telecommunication Equipment Type that is NOT supported by the NJIIS IMS will be ignored and no error will be reported.
- If multiple business phone numbers or emails with the same Telecommunication Use Code are sent, the NJIIS IMS will only process the first occurrence of the business phone number or email with that Telecommunication Use Code; all other phone numbers or emails with that Telecommunication Use Code will be disregarded and it will be reported as a non-fatal error.
- If PID-14.4 is not in email address format, it will be reported as a non-fatal error and the email address will be disregarded.
- If PID-14.6 is not 3 digits and if PID-14.7 is not 7 digits, it will be reported as a non-fatal error and the phone number will be disregarded.
- Extension (PID-14.8) is optional. All other PID-14 components not described in this field usage note, if provided, will be ignored.

PID-15 Primary Language (CE)

This field contains the patient's primary language. HL7 recommends using International Organization for Standardization (ISO) Table 639 as the suggested values in the CDC IG's User-defined Table 0296 – Language.

The NJIIS IMS accepts all ISO 639 language codes. Failure to use the new ISO 639 language codes will result in a non-fatal error.

Example:
|**EN^English^HL70296**|

PID-22 Ethnic Group (CE)

This field further defines the patient's ancestry and should be sent if there is relevant data.

The NJIIS IMS supports all of the U.S. Ethnicity Codes found in the CDC IG's User-defined Table 0189 – Ethnicity. All other values will be ignored, and the VXU message processed as if PID-22 was not valued.

As per the CDC IG, the second triplet of the CE data type for ethnic group (alternate identifier, alternate text, and name of alternate coding system) is reserved for governmentally assigned codes. When sending the U.S. Ethnicity Code, the third component of the triplet it is sent in must be "HL70189".

Example:
|**2186-5^Not Hispanic or Latino^HL70189**|

Example:
|N^Not Hispanic or Latino^HL70189|

PID-24 Multiple Birth Indicator (ID)

This field indicates whether the patient was part of a multiple birth and should be sent if there is relevant data. Refer to HL7-defined Table 0136 – Yes/No indicator in Appendix A of this document for values supported by the NJIIS IMS. They are also listed below for convenience.

- "Y" for Yes means the patient was part of a multiple birth.
- "N" for No means the patient was a single birth.
- Empty field means the multiple birth status is undetermined.

PID-25 Birth Order (NM)

When a patient was part of a multiple birth, this field indicates patient's birth order. If Multiple Birth Indicator (PID-24) is valued with the following, then PID-25 should be sent if there is relevant data:

- "Y" for Yes, then PID-25 should be populated with a value (number) indicating the patient's birth order. A value of "1" represents the first child born, "2" for the second, "3" for the third and so on. If the value in PID-25 is not a number, it will be reported as a non-fatal error.
- "N" for No, then PID-25 is ignored by the NJIIS IMS.

PID-29 Patient Death Date and Time (TS)

This field contains the date and time at which the patient death occurred. While the CDC IG lists an optionality/usage of "C(RE/X)" for this field whereby the HL7 Data Exchange Partner should value this field if there is relevant data when Patient Death Indicator (PID-30) is valued with "Y", the NJIIS IMS ignores this field.

PID-30 Patient Death Indicator (ID)

This field indicates whether the patient is deceased. Refer to HL7-defined Table 0136 – Yes/No for valid values. While the CDC IG lists an optionality/usage of "RE" for this field whereby the HL7 Data Exchange Partner should value this field if there is relevant data, the NJIIS IMS ignores this field.

PD1 – Patient Demographic Segment

PD1 is a conditionally required segment in a VXU message and must be sent for patients born before January 1, 1998.

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

PD1 is a conditionally required segment in a VXU message and must be sent for patients born before January 1, 1998.

Table 5-3 Patient Demographic Segment (PD1)

SEQ	Element Name	Data Type	Value Set	CDC IG Cardinality	NJIIS IMS Cardinality	CDC IG Usage	NJIIS IMS Usage	Conditional Predicate
1	Living Dependency	IS	---	[0..*]	[0..0]	O	X	
2	Living Arrangement	IS		[0..1]	[0..0]	O	X	
3	Patient Primary Facility	XON	---	[0..1]	[0..0]	O	X	
4	Patient Primary Care Provider Name & ID No.	XCN	---	[0..1]	[0..0]	O	X	
5	Student Indicator	IS		[0..1]	[0..0]	O	X	
6	Handicap	IS	---	[0..1]	[0..0]	O	X	
7	Living Will Code	IS	---	[0..1]	[0..0]	O	X	
8	Organ Donor Code	IS	0361	[0..1]	[0..0]	O	X	
9	Separate Bill	ID	---	[0..1]	[0..0]	O	X	
10	Duplicate Patient	CX	0362	[0..1]	[0..0]	O	X	
11	Publicity Code	CE	---	[0..1]	[0..1]	O	I	
12	Protection Indicator	ID	0361	[0..1]	[0..1]	O	C(R/RE)	
13	Protection Indicator Date	DT		[0..1]	[0..1]	O	C(R/X)	
14	Place of Worship	XON	0362	[0..1]	[0..0]	O	X	
15	Advance Directive Code	CE	---	[0..1]	[0..0]	O	X	
16	Immunization Registry Status	IS	---	[0..1]	[0..1]	O	X	
17	Immunization Registry Status Effective Date	DT	---	[0..1]	[0..1]	C(RE/X)	X	
18	Publicity Code Effective Date	DT	---	[0..1]	[0..1]	C(RE/X)	X	
19	Military Branch	IS	0076	[0..1]	[0..0]	X	X	
20	Military Rank/Grade	IS	0003	[0..1]	[0..0]	X	X	
21	Military Status	IS	0354	[0..1]	[0..0]	X	X	

Non-supported segments (Optionality of "X") will be ignored by the NJIIS IMS. All other fields are described in the Field Usage Notes that follow.

A usage of "I" indicates that, while the field is "R", "RE", or "C(a/b)" per the CDC IG , the NJIIS IMS ignores the field in a VXU.

PD1 Field Usage Notes

PD1-11 Publicity Code (CE)

This field contains a user-defined code indicating what level of publicity is allowed (e.g., No Publicity, Family Only) for the patient. In the context of immunization messages, this refers to how a person wishes to be contacted in a reminder or recall situation. Refer to the CDC IG's User-defined Table 0215 – Publicity Code .

While the CDC IG lists an optionality/usage of "RE" for this field whereby the HL7 Data Exchange Partner should value this field if there is relevant data, the NJIIS IMS ignores this field.

PD1-12 Protection Indicator (ID)

This field identifies whether a person's information may be shared with others. Specific protection policies are a local consideration (opt in or opt out, for instance). This field conveys the current state in the sending system. Refer HL7-defined Table 0136 – Yes/No indicator in Appendix A of this document for values supported by the NJIIS IMS.

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

For patients born before 1/1/1998 (i.e., Date/Time of Birth (PID-7) < 19980101), this field is required and must be valued with "Y" or "N". If it is omitted or valued with a code that is NOT "Y" or "N", and the patient is a new patient in NJIIS, it will be considered a fatal error.

For patients born on or after 1/1/1998 (i.e., Date/Time of Birth (PID-7) >= 19980101), this field should be valued if there is relevant data. If it is omitted, and the patient is a new patient in NJIIS, no error will be reported.

There are 3 states:

Protection State	Code
No, protect the data. Client (or guardian) has indicated that the information shall be protected. (Do not share data)	N
Yes, it is not necessary to protect data from other clinicians. Client (or guardian) has indicated that the information does not need to be protected. (Sharing is OK)	Y

Protection State	Code
No determination has been made regarding client's (or guardian's) wishes regarding information sharing.	PD1-12 is empty.

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

Note that the previous Implementation Guide stated that "Y" meant that a person's information could be shared. This was an incorrect interpretation of the use of this field. The meaning now aligns with the definition of HL7. That is, "Y" means the data must be protected and "N" means it is not necessary to protect the data. Existing systems that use the old meaning will need to determine how they will send the correct value in a 2.5.1 message.

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

Example:
|**Y**|
This indicates that Yes, it is not necessary to protect data from other clinicians.

PD1-13 Protection Indicator Effective Date (DT)

This field indicates the effective date for the Protection Indicator (PD1-12). **This field is required if Protection Indicator (PD1-12) is valued**, otherwise it will be considered a fatal error. If Protection Indicator (PD1-12) is NOT valued, the NJIIS IMS does not support the Protection Indicator Effective Date (PD1-13), thereby ignoring it.

Example:
|**20130409**|
This indicates the effective date for the Protection Indicator (PD1-12) is April 9, 2013.

PD1-16 Immunization Registry Status (IS)

This field identifies the current status of the patient in relation to the sending provider organization. Refer to the CDC IG's User-defined Table 0441 – Immunization Registry Status.

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

PD1-17 Immunization Registry Status Effective Date (DT)

This field indicates the effective date for the registry status reported in Immunization Registry Status (PD1-16). While the CDC IG lists an optionality/usage of "C(RE/X)" for this field whereby the HL7 Data Exchange Partner should value this field if there is relevant data when Immunization Registry Status (PD1-16) is valued, the NJIIS IMS ignores this field.

PD1-18 Publicity Code Effective Date (DT)

This is the effective date for Publicity Code (PD1-11). While the CDC IG lists an optionality/usage of "C(RE/X)" for this field whereby the HL7 Data Exchange Partner should value this field if there is relevant data when Publicity Code (PD1-11) is valued, the NJIIS IMS ignores this field.

NK1 – Next of Kin Segment

The NK1 segment contains information about the patient's other related parties, such as mother, father, guardian, etc. Multiple NK1 segments can be sent for a patient.

> In an earlier version of the NJIIS IMS Local IG, NK1 was required to create new patients. As per this Local IG, NK1 optionality/usage is now required but may be empty (RE).

Table 5-4 Next of Kin Segment (NK1)

SEQ	Element Name	Data Type	Value Set	CDC IG Cardinality	NJIIS IMS Cardinality	CDC IG Usage	NJIIS IMS Usage	Conditional Predicate
1	Set ID - NK1	SI		[1..1]	[1..1]	R	R	
2	Name	XPN		[1..*]	[1..1]	O	R	
3	Relationship	CE	0063	[1..1]	[1..1]	O	R	
4	Address	XAD		[0..*]	[1..*]	O	R	
5	Phone Number	XTN	---	[0..*]	[0..*]	O	RE	
6	Business Phone Number	XTN	---	[0..*]	[0..*]	O	O	
7	Contact Role	CE	---	[0..1]	[0..0]	O	X	
8	Start Date	DT	---	[0..1]	[0..0]	O	X	
9	End Date	DT	---	[0..1]	[0..0]	O	X	
10	Next of Kin / Associated Parties Job Title	ST	---	[0..1]	[0..0]	O	X	
11	Next of Kin / Associated Parties Job Code/Class	JCC	---	[0..1]	[0..0]	O	X	
12	Next of Kin / Associated Parties Employee Number	CX	---	[0..1]	[0..0]	O	X	
13	Organization Name - NK1	XON	---	[0..1]	[0..0]	O	X	
14	Marital Status	CE	---	[0..1]	[0..0]	O	X	
15	Administrative Sex	IS	---	[0..1]	[0..0]	O	X	
16	Date/Time of Birth	TS	---	[0..1]	[0..0]	O	X	
17	Living Dependency	IS	---	[0..1]	[0..0]	O	X	
18	Ambulatory Status	IS	---	[0..1]	[0..0]	O	X	
19	Citizenship	CE	---	[0..1]	[0..0]	O	X	
20	Primary Language	CE	---	[0..1]	[0..0]	O	X	
21	Living Arrangement	IS	---	[0..1]	[0..0]	O	X	
22	Publicity Code	CE	---	[0..1]	[0..0]	O	X	
23	Protection Indicator	ID	---	[0..1]	[0..0]	O	X	
24	Student Indicator	IS	---	[0..1]	[0..0]	O	X	
25	Religion	CE	---	[0..1]	[0..0]	O	X	

SEQ	Element Name	Data Type	Value Set	CDC IG Cardinality	NJIIS IMS Cardinality	CDC IG Usage	NJIIS IMS Usage	Conditional Predicate
26	Mother's Maiden Name	XPN	---	[0..1]	[0..0]	O	X	
27	Nationality	CE	---	[0..1]	[0..0]	O	X	
28	Ethnic Group	CE	---	[0..1]	[0..0]	O	X	
29	Contact Reason	CE	---	[0..1]	[0..0]	O	X	
30	Contact Person's Name	XPN	---	[0..1]	[0..0]	O	X	
31	Contact Person's Telephone Number	XTN	---	[0..1]	[0..0]	O	X	
32	Contact Person's Address	XAD	---	[0..1]	[0..0]	O	X	
33	Next of Kin/Associated Party's Identifiers	CX	---	[0..1]	[0..0]	O	X	
34	Job Status	IS	---	[0..1]	[0..0]	O	X	
35	Race	CE	---	[0..1]	[0..0]	O	X	
36	Handicap	IS	---	[0..1]	[0..0]	O	X	
37	Contact Person Social Security Number	ST	---	[0..1]	[0..0]	O	X	
38	Next of Kin Birth Place	ST	---	[0..1]	[0..0]	X	X	
39	VIP Indicator	IS	---	[0..1]	[0..0]	X	X	

Non-supported segments (Optionality of "X") will be ignored by the NJIIS IMS. All other fields are described in the Field Usage Notes that follow.

NK1 Field Usage Notes

NK1-1 Set ID - NK1 (SI)

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

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

NK1-2 Name (XPN)

This field contains the name of the next of kin or associated party. **This is a required field.**

The legal name of the person must be reported first. Refer to HL7-defined Table 0200 – Name Type in Appendix A of this document for values supported by the NJIIS IMS. The NJIIS IMS will only process the Name sent in the first occurrence in a list of repeating Names; all other Names will be ignored. For the Name sent in the first occurrence, the Name Type Code specified in NK1-2.7 must set to "L" for Legal

Name; if it is omitted or other than "L" for Legal Name, it will be treated as if "L" was sent and a non-fatal error reported.

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

- NK1-2.1.1 with the Surname (i.e., Last Name)
- NK1-2.2 with the Given Name (i.e., First Name)

Example:
|**Smith^Jane^Marie^^^^L**|

Additional rules are as follows:

- The First Name, Last Name, and Middle Name must each be 30 characters or less; otherwise it will be truncated and no error will be reported.
- If NK1-2.1.1 and NK1-2.2 are omitted, a non-fatal error will be reported and the NK1 segment will be disregarded.
- If there is relevant data, NK1-2.3 should be valued with the Person's Second and Further Given Names or Initials Thereof (i.e., Middle Name).
    - If NK1-2.3 is included, the NJIIS IMS will only process the Middle Name sent in the first occurrence; all other Middle Names will be ignored.
- Name Type Code (NK1-2.7) must be valued with "L"; if it is omitted or other than "L" for Legal Name, it will be treated as if "L" was sent and a non-fatal error reported.
- Suffix (NK1-2.4) and Prefix (NK1-2.5) are optional. All other NK1-2 components not described in this field usage note, if provided, will be ignored.

NK1-3 Relationship (CE)

This field contains the actual personal relationship that the next of kin/associated party has to the patient. **This is a required field.**

The NJIIS IMS supports all values in the CDC IG's User-defined Table 0063 – Relationship ***except*** for "OTH" (Other). Refer to User-defined Table 0063 – Relationship in Appendix A of this document for values supported by the NJIIS IMS. If NK1-3 is not valued or contains a value other than a NJIIS IMS supported value in User-defined Table 0063 – Relationship in Appendix A of this document, it will be reported as a non-fatal error, and the NK1 segment will be disregarded.

Example:
|**MTH^Mother^HL70063**|

NK1-4 Address (XAD)

This field contains the address of the next of kin/associated party. Refer to HL7-defined Table 0190 – Address Type in Appendix A of this document for values supported by the NJIIS IMS. **This is a required field.**

For the address sent in the first occurrence, if any NK1-4 component is valued, then all of the following required components must be valued, otherwise, it will be considered a fatal error:

- NK1-4.1.1 with Street Address
- NK1-4.3 with City
- NK1-4.4 with State
- NK1-4.5 with Zip
- NK1-4.7 with Address Type

The HL7 Data Exchange Partner should value the following components, if there is relevant data:

- NK1-4.2 with Other Designation (i.e., "Street Address 2" such as apartment or suite number).
- NK1-4.6 with Country.

Example:
|**123 Anywhere St&Anywhere St&123^Apt 5A^Trenton^NJ^12345^USA^L**|

This represents a legal address: 123 Anywhere St, Apt 5A, Trenton, NJ, 12345, USA

Additional rules are as follows:

- Street Address (NK1-4.1.1) should contain Dwelling (i.e., House) Number in the beginning of the field followed by the Street Name. The value cannot exceed 50 characters; otherwise it will be truncated.
    - If NK1-4.1.1 is valued, then Street Name (NK1-4.1.2) and Dwelling Number (NK1-4.1.3) should also be valued. NK1-4.1.2 and NK1-4.1.3 are optional; however, valuing these components will aid in data quality.
    - If the values in NK1-4.1.2 and NK1-4.1.3 do not correspond to the value in NK1-4.1.1, the NJIIS IMS will process NK1-4.1.1 and ignore NK1-4.1.2 and NK1-4.1.3.
- If there is relevant data, Other Designation (NK1-4.2) should contain the "Street Address 2" (e.g., apartment or suite number). The value cannot exceed 50 characters; otherwise it will be truncated.
- City (NK1-4.3) cannot exceed 34 characters; otherwise it will be truncated.
- State (NK1-4.4) must be a valid State Code and cannot exceed 2 characters; otherwise, it will be considered a fatal error.

- Zip (NK1-4.5):
    - The NJIIS IMS only supports a 5 digit Zip code format (#####).
    - Must be exactly 5 digits; otherwise it will be considered a fatal error.
    - Cannot exceed 5 digits; otherwise Zip will be truncated and only the first 5 digits of the Zip will be processed; no error will be reported. If the first 5 are NOT digits, it will be considered a fatal error.
- County (NK1-4.9) is optional. All other NK1-4 components, if provided, will be ignored.

NK1-5 Phone Number (XTN)

This field contains the telephone number of the next of kin/associated party and should be sent if there is relevant data. The primary telephone number must be sent in the first occurrence. If the primary telephone number is not sent, then the repeat delimiter must be sent in the first occurrence. Refer to HL7-defined Table 0201 – Telecommunication Use Code and HL7-defined Table 0202 – Telecommunication Equipment Type in Appendix A of this document for values supported by the NJIIS IMS. They are also listed below for convenience.

Multiple phone numbers for the same person may be sent and must include an NJIIS Supported Telecommunication Use Code and should include Telecommunication Equipment Type.

NJIIS Supported Telecommunication Use Codes:

- "PRN" for Primary Residence Number
- "ORN" for Other Residence Number
- "NET" for Network (Email) Address

NJIIS Supported Telecommunication Equipment Types:

- "PH" for Telephone
- "CP" for Cellular Phone
- "X.400" for X.400 Email Address. Use only if Telecommunication Use Code is "NET".

If any NK1-5 component is valued, then all of the following required components must be valued, otherwise, it will be reported as a non-fatal error and the phone number will be disregarded:

- NK1-5.2 with Telecommunication Use Code
- NK1-5.4 with Email Address, if NK1-5.2 is "NET"
- NK1-5.6 with Area Code, if NK1-5.2 is "PRN" or "ORN"
- NK1-5.7 with Local Number, if NK1-5.2 is "PRN" or "ORN"

The HL7 Data Exchange Partner should value the following components, if there is relevant data:

- NK1-5.3 with Telecommunication Equipment Type

Example:
|^PRN^PH^^^609^5551212~^ORN^CP^^^973^5551212~^NET^X.400^jane.smith@fakeemail.com|

This represents a list of 2 phone numbers and an email address:

- The first is a primary residence number: (609) 555-1212
- The second is a cell phone number: (973) 555-1212
- The third is an email address: jane.smith@fakeemail.com

Additional rules are as follows:

- Any Telecommunication Use Code and Telecommunication Equipment Type that is NOT supported by the NJIIS IMS will be ignored and no error will be reported.
- If multiple phone numbers or emails with the same Telecommunication Use Code are sent, the NJIIS IMS will only process the first occurrence of the phone number or email with that Telecommunication Use Code; all other phone numbers or emails with that Telecommunication Use Code will be disregarded and it will be reported as a non-fatal error.
- If NK1-5.4 is not in email address format, it will be reported as a non-fatal error and the email address will be disregarded.
- If NK1-5.6 is not 3 digits and if NK1-5.7 is not 7 digits, it will be reported as a non-fatal error and the phone number will be disregarded.
- Extension (NK1-5.8) is optional. All other NK1-5 components not described in this field usage note, if provided, will be ignored.

NK1-6 Business Phone Number (XTN)

This field contains the business telephone number of the next of kin/associated party. Multiple phone numbers are allowed for the same person. The primary business telephone number must be sent in the first occurrence. If the primary business telephone number is not sent, then the repeat delimiter must be sent in the first occurrence. Refer to HL7-defined Table 0201 – Telecommunication Use Code and HL7-defined Table 0202 – Telecommunication Equipment Type in Appendix A of this document for values supported by the NJIIS IMS. They are also listed below for convenience.

A business phone number and business email address for the same person may be sent and must include a NJIIS Supported Telecommunication Use Code and should include Telecommunication Equipment Type.

NJIIS Supported Telecommunication Use Codes:

- "WPN" for Work Number

- "NET" for Network (Email) Address

NJIIS Supported Telecommunication Equipment Types:

- "PH" for Telephone
- "CP" for Cellular Phone
- "X.400" for X.400 Email Address. Use only if Telecommunication Use Code is "NET".

If any NK1-6 component is valued, then all of the following required components must be valued, otherwise, it will be reported as a non-fatal error and the business phone number will be disregarded:

- NK1-6.2 with Telecommunication Use Code
- NK1-6.4 with Email Address, if NK1-6.2 is "NET"
- NK1-6.6 with Area Code, if NK1-6.2 is "WPN"
- NK1-6.7 with Local Number, if NK1-6.2 is "WPN"

The HL7 Data Exchange Partner should value the following components, if there is relevant data:

- NK1-6.3 with Telecommunication Equipment Type

Example:
|**^WPN^PH^^^201^5551212~^NET^X.400^jane.smith@fakeworkemail.com**|

This represents a phone number and an email address:

- The first is a work number: (201) 555-1212
- The second is an email address: jane.smith@fakeworkemail.com

Additional rules are as follows:

- Any Telecommunication Use Code and Telecommunication Equipment Type that is NOT supported by the NJIIS IMS will be ignored and no error will be reported.
- If multiple business phone numbers or emails with the same Telecommunication Use Code are sent, the NJIIS IMS will only process the first occurrence of the business phone number or email with that Telecommunication Use Code; all other phone numbers or emails with that Telecommunication Use Code will be disregarded and it will be reported as a non-fatal error.
- If NK1-6.4 is not in email address format, it will be reported as a non-fatal error and the email address will be disregarded.
- If NK1-6.6 is not 3 digits and if NK1-6.7 is not 7 digits, it will be reported as a non-fatal error and the phone number will be disregarded.

- Extension (NK1-6.8) is optional. All other NK1-6 components not described in this field usage note, if provided, will be ignored.

PV1 – Patient Visit Segment

The PV1 segment is used to send visit-specific information of the patient. In the VXU it is associated with the RXA or immunization record. **For VXU messages, the NJIIS IMS will process PV1 segment that convey immunization-level VFC eligibility.**

> The PV1 segment is used to convey visit specific information. In HL7 2.3.1, the primary use of the PV1 segment in immunization messages was to carry information about the client's VFC eligibility status. In HL7 2.5.1 this is now recorded at the immunization event (dose administered) level via an OBX segment. Use of this segment for the purpose of reporting the client's eligibility for a funding program at the visit level is not supported in the later versions of Implementation Guide.

If Administration Notes (RXA-9.1) is "00" (New Immunization Record), the PV1 segment is required but may be empty (RE). If Administration Notes (RXA-9.1) is "00" (New Immunization Record) and a PV1 segment is NOT sent, Vaccines for Children (VFC) Eligibility will NOT be reported. The NJIIS IMS will treat the immunization-level VFC eligibility as if it was Not VFC eligible; thereby VFC inventory will NOT be decremented in NJIIS.

If Administration Notes (RXA-9.1) is NOT "00" (New Immunization Record), the NJIIS IMS ignores the PV1 segment.

Table 5-5 Patient Visit Segment (PV1)

SEQ	Element Name	Data Type	Value Set	CDC IG Cardinality	NJIIS IMS Cardinality	CDC IG Usage	NJIIS IMS Usage	Conditional Predicate
1	Set ID - PV1	SI	---	[0..1]	[0..0]	O	X	
2	Patient class	IS	0004	[1..1]	[0..1]	R	I	
3	Assigned patient location	PL	---	[0..1]	---	O	X	
4	Admission type	IS	---	[0..1]	---	O	X	
5	Preadmit number	CX	---	[0..1]	---	O	X	
6	Prior patient location	PL	---	[0..*]	---	O	X	
7	Attending doctor	XCN	---	[0..*]	---	O	X	
8	Referring doctor	XCN	---	[0..*]	---	O	X	
9	Consulting doctor	XCN	---	[0..1]	---	O	X	
10	Hospital service	IS	---	[0..1]	---	O	X	
11	Temporary location	PL	---	[0..1]	---	O	X	
12	Preadmit test indicator	IS	---	[0..1]	---	O	X	
13	Re-admission indicator	IS	---	[0..1]	---	O	X	
14	Admit source	IS	---	[0..1]	---	O	X	
15	Ambulatory status	IS	---	[0..*]	---	O	X	

SEQ	Element Name	Data Type	Value Set	CDC IG Cardinality	NJIIS IMS Cardinality	CDC IG Usage	NJIIS IMS Usage	Conditional Predicate
16	VIP indicator	IS	---	[0..1]	---	O	X	
17	Admitting doctor	XCN	---	[0..*]	---	O	X	
18	Patient type	IS	---	[0..1]	---	O	X	
19	Visit number	CX	---	[0..1]	---	O	X	
20	Financial class	FC	0064	[0..*]	[0..*]	O	O	
21	Charge price indicator	IS	---	[0..1]	---	O	X	
22	Courtesy code	IS	---	[0..1]	---	O	X	
23	Credit rating	IS	---	[0..1]	---	O	X	
24	Contract code	IS	---	[0..*]	---	O	X	
25	Contract effective date	DT	---	[0..*]	---	O	X	
26	Contract amount	NM	---	[0..*]	---	O	X	
27	Contract period	NM	---	[0..*]	---	O	X	
28	Interest code	IS	---	[0..1]	---	O	X	
29	Transfer to bad debt code	IS	---	[0..1]	---	O	X	
30	Transfer to bad debt date	DT	---	[0..1]	---	O	X	
31	Bad debt agency code	IS	---	[0..1]	---	O	X	
32	Bad debt transfer amount	NM	---	[0..1]	---	O	X	
33	Bad debt recovery amount	NM	---	[0..1]	---	O	X	
34	Delete account indicator	IS	---	[0..1]	---	O	X	
35	Delete account date	DT	---	[0..1]	---	O	X	
36	Discharge disposition	IS	---	[0..1]	---	O	X	
37	Discharged to location	CM	---	[0..1]	---	O	X	
38	Diet type	CE	---	[0..1]	---	O	X	
39	Servicing facility	IS	---	[0..1]	---	O	X	
40	Bed status	IS	---	[0..1]	---	O	X	
41	Account status	IS	---	[0..1]	---	O	X	
42	Pending location	PL	---	[0..1]	---	O	X	
43	Prior temporary location	PL	---	[0..1]	---	O	X	
44	Admit date/time	TS	---	[0..1]	---	O	X	
45	Discharge date/time	TS	---	[0..1]	---	O	X	
46	Current patient balance	NM	---	[0..1]	---	O	X	
47	Total charges	NM	---	[0..1]	---	O	X	
48	Total adjustments	NM	---	[0..1]	---	O	X	
49	Total payments	NM	---	[0..1]	---	O	X	
50	Alternate visit ID	CX	---	[0..1]	---	O	X	
51	Visit indicator	IS	---	[0..1]	---	O	X	
52	Other healthcare provider	XCN	---	[0..*]	---	O	X	

Non-supported segments (Optionality of "X") will be ignored by the NJIIS IMS. All other fields are described in the Field Usage Notes that follow.

PV1 Field Usage Notes

PV1-20 Financial Class (IS)

This field contains the financial class assigned to the patient to indicate Patients VFC Eligibility.

For VXU messages, the NJIIS IMS will only process PV1 segment that convey vaccine funding program eligibility (e.g., VFC eligibility). Refer to User-defined Table 0064 – Financial Class in Appendix A of this document for values supported by the NJIIS IMS.

When a PV1 is sent to convey vaccine funding program eligibility, the HL7 Data Exchange Partner must value the following required components:

- PV1-20.1 with a NJIIS supported Financial Class Code from User-defined Table 0064 – Financial Class in Appendix A of this document.
- PV1-20.2 with Effective date in “YYYYMMDD” format.

Example:
|**V01^20101123**| for a single immunization record.
|V02^20131111~V01^20140506~NJIIS01^20130715~V03^20130929| for multiple immunizations

Additional rules are as follows:

- In the scenario where multiple RXA segments are included in a single VXU message, a single PV1- segment should be submitted with repeating values in PV1-20.1 with NJIIS supported Financial Class Code and PV1-20.2 with the effective date corresponding with the date administered. It’s a repeating field
- Every effort should be made to associate an effective date with a corresponding immunization date. No information about the eligibility status of the other incoming immunizations should be inferred from this message. It is possible that a Financial Class Code and effective date may be sent that was not related to an immunization event: the status may not be applicable to any immunization in the message.
- For each RXA, the NJIIS IMS will obtain the status from PV1-20 by matching immunization date with Financial Class Code’s effective date.

PV2 – Patient Visit Segment

If present, the entire PV2 segment is ignored by the NJIIS IMS.

GT1 – Guarantor Segment

If present, the entire GT1 segment is ignored by the NJIIS IMS.

IN1 – Insurance Segment

If present, the entire IN1 segment is ignored by the NJIIS IMS.

IN2 – Insurance Segment

If present, the entire IN2 segment is ignored by the NJIIS IMS.

IN3 – Insurance Segment

If present, the entire IN3 segment is ignored by the NJIIS IMS.

ORC – Order Request Segment

If present, the entire ORC segment is ignored by the NJIIS IMS.

TQ1 – Timing/Quantity Segment

If present, the entire TQ1 segment is ignored by the NJIIS IMS.

TQ2 – Timing/Quantity Segment

If present, the entire TQ2 segment is ignored by the NJIIS IMS.

RXA - Pharmacy/Treatment Administration Segment

The RXA segment carries pharmacy administration data.

Each RXA must be associated with one ORC, based on the HL7 2.5.1 standard; this is a change from the HL7 2.3.1 standard. In the HL7 2.3.1 standard the ORC is optional and rarely included in a VXU message.

Table 5-6 Pharmacy/Treatment Administration (RXA)

SEQ	Element Name	Data Type	Value Set	CDC IG Cardinality	NJIIS IMS Cardinality	CDC IG Usage	NJIIS IMS Usage	Conditional Predicate
1	Give Sub-ID Counter	NM	---	[1..1]	[1..1]	R	R	
2	Administration Sub-ID Counter	NM	---	[1..1]	[1..1]	R	R	
3	Date/Time Start of Administration	TS	---	[1..1]	[1..1]	R	R	
4	Date/Time End of Administration	TS	---	[1..1]	[0..1]	R	I	
5	Administered Code	CE	0292	[1..1]	[1..1]	R	R	
6	Administered Amount	NM	---	[1..1]	[1..1]	R	R	
7	Administered Units	CE	---	[0..1]	[0..1]	C	C(R/I)	If RXA-6 is not valued "999"
8	Administered Dosage Form	CE	---	[0..*]	[0..0]	O	X	
9	Administration Notes	CE	NIP001	[0..*]	[1..1]	O	R	
10	Administering Provider	XCN		[0..1]	[0..1]	O	RE	
11	Administered- at Location	CM	---	[0..1]	[1..1]	C	C(R/I)	If RXA-9.1 is valued "00"
12	Administered Per (Time Unit)	ST	---	[0..1]	[0..0]	C	I	
13	Administered Strength	NM	---	[0..1]	[0..0]	O	X	
14	Administered Strength Units	CE	---	[0..1]	[0..0]	O	X	
15	Substance Lot Number	ST	---	[0..*]	[0..*]	O	C(R/O)	If RXA-9.1 is valued "00"
16	Substance Expiration Date	TS	---	[0..*]	[0..1]	O	C(RE/O)	If RXA-9.1 is valued "00"
17	Substance Manufacturer Name	CE	---	[0..*]	[0..*]	O	C(R/O)	If RXA-9.1 is valued "00"
18	Substance/Treatment Refusal Reason	CE	---	[0..*]	[0..*]	O	C(R/X)	If RXA-9.1 is valued "00"
19	Indication	CE	---	[0..1]	[0..0]	O	X	
20	Completion Status	ID	0322	[0..1]	[0..1]	O	RE	
21	Action Code - RXA	ID	0323	[0..1]	[0..1]	O	RE	
22	System Entry Date/Time	TS	---	[0..1]	[0..0]	O	X	
23	Administered Drug Strength Volume	---	---	[0..1]	[0..0]	X	X	

SEQ	Element Name	Data Type	Value Set	CDC IG Cardinality	NJIIS IMS Cardinality	CDC IG Usage	NJIIS IMS Usage	Conditional Predicate
24	Administered Drug Strength Volume Units	---	---	[0..1]	[0..0]	X	X	
25	Administered Barcode Identifier	---	---	[0..1]	[0..0]	X	X	
26	Pharmacy Order Type	---	---	[0..1]	[0..0]	X	X	

Non-supported segments (Optionality of "X") will be ignored by the NJIIS IMS. All other fields are described in the Field Usage Notes that follow.

A usage of "I" indicates that, while the field is "R", "RE", or "C(a/b)" per the CDC IG , the NJIIS IMS ignores the field in a VXU.

RXA Field Usage Notes

RXA-1 Give Sub-ID Counter (NM)

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

RXA-2 Administration Sub-ID Counter (NM)

This field is used to track multiple RXA under an Order Group. Since each Order Group has only one RXA in immunization messages, constrain to "1".

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

The field contains the date the vaccination occurred.

Example:
|**20090501**|
This represents an immunization date on May 1, 2009.

RXA-5 Administered Code (CE)

This field identifies the medical substance administered.

Vaccines Administered (CVX) codes will be in the first triplet of the CE data type.

Example:
|**21^Varicella^CVX**|

RXA-6 Administered Amount (NM)

This field records the amount of pharmaceutical administered.

The NJIIS IMS will default this field to "999".

Example:
|999|

RXA-11 Administered-at Location (LA2)

This field is valued with administered provider NJIIS ID.

Example:
|**^^^325**|

RXA-15 Substance Lot Number (ST)

This field may contain the Lot Number of the medical substance administered.

RXA-16 Substance Expiration Date (TS)

This field may contain the expiration date of the medical substance administered.

RXA-17 Substance Manufacturer Name (CE)

This field may contain the manufacturer of the medical substance administered.

RXA-20 Completion Status (ID)

This field indicates if the dose was successfully given and may be sent if NJIIS IMS has relevant data.

RXR – Pharmacy/Treatment Route Segment

The RXR segment contains the alternative combination of route, site, administration device, and administration method that are prescribed as they apply to a particular order. It is a child of an RXA segment. NJIIS currently only accepts the route and administration site.

Table 5-7 Pharmacy/Treatment Route (RXR)

SEQ	Element Name	Data Type	Value Set	CDC IG Cardinality	NJIIS IMS Cardinality	CDC IG Usage	NJIIS IMS Usage	Conditional Predicate
1	Route	CE	0162	[1..1]	[1..1]	R	R	
2	Administration Site	CWE	0163	[0..1]	[0..1]	RE	RE	
3	Administration Device	CE		[0..1]	[0..0]	O	X	
4	Administration Method	CE		[0..1]	[0..0]	O	X	
5	Routing Instruction	CE		[0..1]	[0..0]	O	X	
6	Administration Site Modifier	CWE		[0..1]	[0..0]	O	X	

Non-supported segments (Optionality of "X") will be ignored by the NJIIS IMS. All other fields are described in the Field Usage Notes that follow.

RXR Field Usage Notes

RXR-1 Route (CE)

This field is the route of administration. **This is a required field.**

Refer to HL7-defined Table 0162 – Route of Administration in Appendix A of this document for values supported by the NJIIS IMS. The NJIIS IMS does NOT support the Food and Drug Administration (FDA) values in the CDC IG's HL7-defined Table 0162 – Route of Administration.

> Note that the Healthcare Information Technology Standards Panel (HITSP) has specified the use of the FDA route of administration. Systems should be prepared to accept either FDA or HL7 codes.

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

- RXR-1.1 with a NJIIS supported HL7 code from HL7-defined Table 0162 – Route of Administration in Appendix A of this document.

- RXR-1.3 with "HL70162".

The HL7 Data Exchange Partner should value the following component, if there is relevant data:

- RXR-1.2 with a text description of the HL7 code.

Example:
|**SC^Subcutaneous^HL70162**|

Additional rules are as follows:

- If RXR-1.1 is omitted, a fatal error will be reported. If RXR-1.1 is valued with a value other than a NJIIS supported value from HL7-defined Table 0162 – Route of Administration in Appendix A of this document, the NJIIS IMS will report a non-fatal error.
- If RXR-1.3 is omitted, a fatal error will be reported. All other RXR-1 components not described in this field usage note, if provided, will be ignored.

RXR-2 Administration Site (CWE)

This field contains the site of the administration and should be sent if there is relevant data.

The NJIIS IMS supports all of the HL7 values in the CDC IG's HL7-defined Table 0163 – Site of Administration.

If any RXR-2 component is valued, then the NJIIS IMS requires the following components to be valued, otherwise, a non-fatal error will be reported:

- RXR-2.1 with a value from the CDC IG's HL7-defined Table 0163 – Site of Administration.
- RXR-2.3 with "HL70163".

The HL7 Data Exchange Partner should value the following components, if there is relevant data:

- RXR-2.2 with a text description of the HL7 code.

Example:
|**LD^Left Deltoid^HL70163**|

Additional rules are as follows:

- If RXR-2.1 is valued with a value other than a value from the CDC IG's HL7-defined Table 0163 – Site of Administration, NJIIS will report a non-fatal error.
- If RXR-2.3 is omitted or valued with value other than "HL70163", the NJIIS IMS will report a non-fatal error.
- All other RXR-2 components not described in this field usage note, if provided, will be ignored.

OBX – Observation Result Segment

If present, the entire OBX segment is ignored by the NJIIS IMS for HL7 version 2.3.1.

NTE Field Usage Notes

If present, the entire NTE segment is ignored by the NJIIS IMS.

6. Message Acknowledgement (ACK)

Overview

ACK in Response to a VXU Message

The NJIIS IMS will always respond with an ACK to an HL7 2.3.1 VXU message sent by an HL7 Data Exchange Partner, regardless of whether that VXU was sent to report, update, or delete an immunization.

If the VXU is processed successfully, the NJIIS IMS sends an ACK response. MSA-1 will be valued with "AA" indicating that the VXU was successful and did not contain any errors.

If there are only non-fatal errors in the VXU message, the NJIIS IMS sends an ACK response with a MSA-1 value of "AE". The ACK will contain an ERR segment (one for each non-fatal error) that provides information about the error, such as the error location and the type of error.

If a fatal error occurs during processing, the NJIIS IMS sends an ACK response with a MSA-1 value of "AR" indicating the VXU message was rejected due to fatal errors. The ACK will contain an ERR segment (one for each fatal error) that provides information about the error, such as the error location and the type of error.

The NJIIS IMS will transmit the patient's NJIIS Registry ID (if available) back to the HL7 Data Exchange Partner in an ACK response. The NJIIS Registry ID (if available) will be returned in Diagnostic Information (ERR-7) field, where the HL7 Error Code (ERR-3) is set to "0" (Message Accepted), Severity (ERR-4) is set to "I" (Information) and Application Error Parameter (ERR-6) is set to “NJIIS_REGISTRY_ID”.

> It is highly recommended that the HL7 Data Exchange Partner store the NJIIS Registry ID, returned by the NJIIS IMS, in their system with the patient record and include that NJIIS Registry ID in future VXU and QBP messages to decrease the time that it takes for the NJIIS IMS to process and respond to the messages, as well as increase the likelihood that a patient match will be found.
>
> Under certain circumstances, a patient's NJIIS Registry ID may change. The NJIIS IMS will always send the surviving NJIIS Registry ID in the ACK response message; therefore, the NJIIS Registry ID returned by the NJIIS IMS within the ACK may be different from the NJIIS Registry ID that the HL7 Data Exchange Partner submitted in the VXU message. The HL7 Data Exchange Partner's system should replace its existing NJIIS Registry ID reference with the new NJIIS Registry ID that was communicated within the ACK message.

In the ACK message, ERR segment containing fatal errors will be returned first, followed by ERR segments containing non-fatal errors, then followed by ERR segment containing NJIIS registry ID.

ACK Message Segments

MSH – Message Header Segment

Table 6-1 Message Header Segment (MSH)

SEQ	Element Name	Data Type	Value set	CDC IG Cardinality	NJIIS IMS Cardinality	CDC IG Usage	NJIIS IMS Usage	Conditional Predicate
1	Field Separator	ST		[1..1]	[1..1]	R	R	
2	Encoding Characters	ST		[1..1]	[1..1]	R	R	
3	Sending Application	HD	0361	[0..1]	[1..1]	RE	R	
4	Sending Facility	HD	0362	[0..1]	[1..1]	RE	R	
5	Receiving Application	HD	0361	[0..1]	[1..1]	RE	RE	
6	Receiving Facility	HD	0362	[0..1]	[0..1]	RE	RE	
7	Date/Time Of Message	TS		[1..1]	[1..1]	R	R	
8	Security	ST		[0..1]	[0..0]	O	X	
9	Message Type	MSG		[1..1]	[1..1]	R	R	
10	Message Control ID	ST		[1..1]	[1..1]	R	R	
11	Processing ID	PT		[1..1]	[1..1]	R	R	
12	Version ID	VID		[1..1]	[1..1]	R	R	
13	Sequence Number	NM		[0..1]	[0..0]	O	X	
14	Continuation Pointer	ST		[0..1]	[0..0]	O	X	
15	Accept Acknowledgement Type	ID	0155	[0..1]	[1..1]	RE	RE	
16	Application Acknowledgment Type	ID	0155	[0..1]	[1..1]	RE	RE	
17	Country Code	ID		[0..1]	[0..0]	O	X	
18	Character Set	ID		[0..1]	[0..0]	O	X	
19	Principal Language Of Message	CE		[0..1]	[0..0]	O	X	
20	Alternate Character Set Handling Scheme	ID		[0..1]	[0..0]	O	X	
21	Message Profile Identifier	EI		[0..*]	[0..*]	C(R/O)	I	

Non-supported segments (Optionality of "X") will be ignored by the NJIIS IMS. All other fields are described in the Field Usage Notes that follow.

A usage of "I" indicates that, while the field is "R", "RE", or "C(a/b)" per the CDC IG , the NJIIS IMS ignores the field in a VXU.

MSH Field Usage Notes

MSH-1 Field Separator (ST)

This field contains the separator between the segment ID and the first real field, Encoding Characters (MSH-2). As such it serves as the separator and defines the character to be used as a separator for the rest of the message. **This is a required field. The NJIIS IMS will value this field with the required value which is |** (ASCII 124).

Example:
MSH|
↑

MSH-2 Encoding Characters (ST)

This field contains the four characters in the following order: the component separator, repetition separator, escape character, and subcomponent separator. **This is a required field. The NJIIS IMS will value this field with the required values which are ^~\&** (ASCII 94, 126, 92, and 38, respectively).

Special characters that are utilized within HL7 messages as separators (also referred to as delimiters) should not be included within those same HL7 messages as data because their presence would interfere with the parsing of the message. If an HL7 message does contain one of these special delimiter characters as part of the message content (e.g., an ampersand as part of an address: "Apt. A & B"), then the HL7 Data Exchange Partner must utilize a special escape sequence to indicate that the character is a text character and not a delimiter content (e.g., "Apt. A\T\B" to represent "Apt. A & B"); otherwise, the NJIIS IMS cannot distinguish between the delimiter character and a character that is part of the text.

In order to include any one of these special characters as data within an HL7 message, those characters must be converted into a predefined sequence of characters that begin and end with the escape character "\". HL7 Data Exchange Partners should utilize the following table to convert special characters into escape sequences when creating messages *sent to* the NJIIS IMS and to convert escape sequences to special characters when parsing messages *coming from* the NJIIS IMS.

Special Character Description	Special Character	Escape Sequence
Escape character	\	\E\
Field separator	|	\F\
Repetition separator	~	\R\
Component separator	^	\S\
Subcomponent separator	&	\T\

MSH-3 Sending Application (HD)

This field uniquely identifies the sending application. This is not the product, but rather the name of the specific instance. **This is a required field.**

The NJIIS IMS will not maintain a list of IIS applications in the CDC IG's User-defined Table 0361 and, therefore, will not limit MSH-3.1 values to the CDC IG's User-defined Table 0361 value set. The NJIIS IMS will value MSH-3.1 with "NJIIS".

Example:
MSH|^~\&|**NJIIS**|

MSH-4 Sending Facility (HD)

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

The NJIIS IMS will not maintain a list of facilities/Provider IDs in the CDC IG's User-defined Table 0362 and, therefore, will not limit MSH-4.1 values to the CDC IG's User-defined Table 0362 value set. The NJIIS IMS will value MSH-4.1 with "NJDOH".

Example:
|**NJDOH**|

MSH-5 Receiving Application (HD)

This field uniquely identifies the receiving application. This is not the product, but rather the name of the specific instance.

The NJIIS IMS will not maintain a list of IIS applications in the CDC IG's User-defined Table 0361 and, therefore, will not limit MSH-5.1 values to the CDC IG's User-defined Table 0361 value set.

The NJIIS IMS will value MSH-5.1 in the ACK message with what was provided in MSH-3.1 of the corresponding VXU or QBP message.

MSH-6 Receiving Facility (HD)

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

The NJIIS IMS will not maintain a list of facilities/Provider IDs in CDC IG's User-defined Table 0362 and, therefore, will not limit MSH-6.1 values to the CDC IG's User-defined Table 0362 value set.

The NJIIS IMS will value MSH-6.1 in the ACK message with what was provided in MSH-4.1 of the corresponding VXU or QBP message.

MSH-7 Date/Time Of Message (TS)

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

The degree of precision should be to the second. The time zone must be specified and will be used throughout the message as the default time zone. When the time zone is not included, it is presumed to be the time zone of the sender.

The expected format is YYYYMMDDHHMMSS.

Milliseconds and Time zone values are Optional.

For example formats including milliseconds and time zones are:

YYYYMMDDHHMMSS.SSSS or YYYYMMDDHHMMSS.SSSS+/-ZZZZ.

Example:
|**20120204030159**|
This represents February 4, 2012 at 3:01:59.

Additional precision as specified in the Date/Time (DTM) HL7 data type, if sent, will be accepted. If the Date/Time of Message is not sent or is invalid (i.e., not a valid date or not in the correct format), a fatal error will be reported.

MSH-9 Message Type (MSG)

This field contains the message type, trigger event, and the message structure ID for the message. **This is a required field. All three components are required.**

When sending an ACK, **the NJIIS IMS will value MSH-9 with:** |**ACK^V04^ACK**|

The NJIIS IMS will value **the following required components**:

- **MSH-9.1** Message Type with **ACK**
- **MSH-9.2** Trigger Event with **V04**
- **MSH-9.3** Message Structure ID with **ACK**

MSH-10 Message Control ID (ST)

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

The NJIIS IMS will value MSH-10 in the ACK message with what was provided in the MSH-10 of the corresponding VXU message.

MSH-11 Processing ID (PT)

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

Refer to HL7-defined Table 0103 – Processing ID in Appendix A of this document for values supported by the NJIIS IMS.

The NJIIS IMS will value MSH-11 in the ACK message with what was provided in the MSH-11 of the corresponding VXU message.

MSH-12 Version ID (VID)

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

Only the first component needs to be populated. **When sending a 2.3.1 message, the NJIIS IMS will value MSH-12 with: |2.3.1|**

MSH-15 Accept Acknowledgment Type (ID)

This field identifies the conditions under which accept acknowledgments are required to be returned in response to this message. Required for enhanced acknowledgment mode. Refer to HL7-defined Table 0155 – Accept/Application Acknowledgment Conditions in Appendix A of this document for values supported by the NJIIS IMS.

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

Since the NJIIS IMS does not expect nor require the HL7 Data Exchange Partner to send an acknowledgment in response to an ACK message, the NJIIS IMS will value **MSH-15 with: |NE|**.

MSH-16 Application Acknowledgment Type (ID)

This field contains the conditions under which application acknowledgments are required to be returned in response to this message. Required for enhanced acknowledgment mode. Refer to HL7-defined Table 0155 – Accept/Application Acknowledgment Conditions in Appendix A of this document for values supported by the NJIIS IMS. If MSH-15 (Accept Acknowledgment Type) and MSH-16 (Application Acknowledgment Type) are omitted (or are both empty), the original acknowledgment mode rules are used. This means that, unless otherwise specified, the receiving application will send acknowledgment when it has processed the message.

Since the NJIIS IMS does not expect nor require the HL7 Data Exchange Partner to send an acknowledgment in response to an ACK message, the NJIIS IMS will value **MSH-15 with: |NE|**.

SFT – Software Segment

The SFT segment will not be included in an ACK message.

MSA – Message Acknowledgement Segment

Table 6-2 Message Acknowledgement Segment (MSA)

SEQ	Element Name	Data Type	Value Set	CDC IG Cardinality	NJIIS IMS Cardinality	CDC IG Usage	NJIIS IMS Usage	Conditional Predicate
1	Acknowledgment Code	ID	0008	[1..1]	[1..1]	R	R	
2	Message Control ID	ST		[1..1]	[1..1]	R	R	
3	Text Message	ST		[0..0]	[0..0]	X	X	
4	Expected Sequence Number	NM		[0..1]	[0..0]	O	X	
5	Delayed Acknowledgment Type			[0..1]	[0..0]	O	X	
6	Error Condition	CE		[0..0]	[0..0]	X	X	

Non-supported segments (Optionality of "X") will be ignored by the NJIIS IMS. All other fields are described in the Field Usage Notes that follow.

MSA Field Usage Notes

MSA-1 Acknowledgment Code (ID)

This field contains an acknowledgment code, see message processing rules. **This is a required field.**

Refer to HL7-defined Table 0008 – Acknowledgement Code in Appendix A of this document for values supported by the NJIIS IMS. The NJIIS IMS will value this field with one of the NJIIS IMS supported values.

MSA-2 Message Control ID (ST)

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

It allows the sending system to associate this response with the message for which it is intended. This field echoes the Message Control ID sent in MSH-10 by the initiating system. Therefore, the NJIIS IMS will value MSA-2 in the ACK message with what was provided in the MSH-10 of the corresponding VXU message.

ERR – Error Segment

Table 6-3 Error Segment (ERR) in ACK

SEQ	Element Name	Data Type	Value Set	CDC IG Cardinality	NJIIS IMS Cardinality	CDC IG Usage	NJIIS IMS Usage	Conditional Predicate
1	Error Code and Location	ELD		[0..0]	[0..0]	X	X	
2	Error Location	ERL		[0..1]	[0..1]	RE	RE	
3	HL7 Error Code	CWE	0357	[1..1]	[1..1]	R	R	
4	Severity	ID	0516	[1..1]	[1..1]	R	R	
5	Application Error Code	CWE	0533	[0..1]	[0..1]	O	O	
6	Application Error Parameter	ST		[0..1]	[0..1]	O	O	
7	Diagnostic Information	TX		[0..1]	[0..1]	O	O	
8	User Message	TX		[0..1]	[0..1]	O	O	
9	Inform Person Indicator	IS		[0..1]	[0..0]	O	X	
10	Override Type	CWE		[0..1]	[0..0]	O	X	
11	Override Reason Code	CWE		[0..1]	[0..0]	O	X	
12	Help Desk Contact Point	XTN		[0..1]	[0..0]	O	X	

Non-supported fields (usage of “X”) will not be valued by the NJIIS IMS. All other fields are described in the Field Usage Notes that follow.

ERR Field Usage Notes

ERR-2 Error Location (ERL)

The NJIIS IMS will value this field with the location of the error within the VXU message. Each error will have an ERR, so no repeats are allowed on this field. This field will only be empty if location is not meaningful (e.g., unidentifiable).

ERR-2 will be formatted as follows:

- The 1st component contains the Segment ID
- The 2nd component contains the Segment Sequence
- The 3rd component contains the Field Position
- The 4th component contains the Field Repetition
- The 5th component contains the Component Number

Example for ERR-2 if PID-5 (Patient Name) was not valued:

ERR||PID^1^5^1|

If PID-3 was valued with |**12345^^^325^MR~202729^^^NJIIS^**|, then ERR-2 would be valued as follows to indicate the error is in the 2nd repetition of PID-3.5 of the 1st (only) PID segment:

ERR||PID^1^3^2^5|

ERR-3 HL7 Error Code (CWE)

The NJIIS IMS will value this field the HL7 (communications) error code. Code examples include:

Code	Text	Description
100	Segment sequence error	The message segments were not in the proper order or required segments are missing.
101	Required field missing	A required field is missing from the segment.
102	Data type error	The field contained data of the wrong data type, e.g., a NM (number) field contained letters of the alphabet.
103	Table value not found	A field of data type ID or IS was compared against the corresponding table and no match was found.
200	Unsupported message	The message type is not supported.
203	Unsupported version ID	The Version ID is not supported.

Refer to HL7 Table 0357 – Message Error Condition Codes within the CDC IG for all valid values.

Example:

ERR||PID^1^7^1|102^data type error^HL70357|

ERR-4 Severity (ID)

The NJIIS IMS will value this field with one of the following HL7-defined Table 0516 – Error Severity Code in appendix A of this document:

- “W” (Warning) if the error was non-fatal; non-fatal errors may result in loss of data.
- “E” (Error) if the error was fatal.
- “I” (Information) if any information needs to be conveyed.

ERR-5 Application Error Code (CWE)

If meaningful to help identify the specific error that occurred, the NJIIS IMS will value this field with one of the application specific error codes from User-defined Table 0533 – Application Error Code in Appendix A of this document.

Example:

ERR||PID^1^7^1|102^data type error^HL70357|E|BadDateTime^^HL70533|

7. CHANGE HISTORY

Version	Date	Author	Location	Change
1.1.0	05/15/2014	A. Reddy	Complete Document	Comprehensive changes to the complete document

Appendix A: CODE TABLES

Code Tables are only listed in this appendix if the NJIIS IMS supports a subset of the codes or when the table is user-defined and contains NJIIS-specific codes. For the full list of Code Tables, please see Appendix 1 in the HL7 2.3.1 Implementation Guide for Immunization Messaging, Release 2.2 (CDC IG).

Code Tables in this Local IG follow the order, layout, and format of the Code Tables in the CDC IG. See the message specific, field usage notes of this Local IG for additional information regarding the NJIIS IMS usage of these codes.

HL7-defined Table 0001 – Administrative Sex

These codes are used in PID-8.

Value	Description
M	Male
F	Female
O	Other
U	Unknown

HL7-defined Table 0005 – Race

These codes are used in PID-10.

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

HL7-defined Table 0008 – Acknowledgement Code

These codes are used in MSA-1.

Value	Description
AA	Original mode: Application Accept Enhanced mode: Application acknowledgment: Accept
AE	Original mode: Application Error

	Enhanced mode: Application acknowledgment: Error
AR	Original mode: Application Reject Enhanced mode: Application acknowledgment: Reject

User-defined Table 0063 – Relationship

These codes are used in NK1-3.

Value	Description
AUN	Aunt
BRO	Brother
CGV	Care giver
FCH	Foster child
FTH	Father
GRD	Guardian
GRP	Grandparent
MTH	Mother
PAR	Parent
SCH	Stepchild
SEL	Self
SIB	Sibling
SIS	Sister
SPO	Spouse
UNC	Uncle

User-defined Table 0064 – Financial Class

These codes are used in PV1-20.

Code	Description
V01	Not VFC eligible
V02	VFC eligible-Medicaid, Medicaid Managed Care, and NJ FamilyCare Plan A
V03	VFC eligible-Uninsured (Has no health insurance)
V04	VFC eligible-American Indian/Alaskan Native
V05	VFC eligible-Federally Qualified Health Center Patient (under-insured)
V07	Local-specific eligibility. Use this code for "NJ FamilyCare Plans B,C & D" (CHIP). From 07/01/2014 onwards NJ Family Care Plan B, C, & D will not be part of VFC inventory/funding. If Date of administration is **BEFORE** 07/01/2014 then inventory for VFC must decrement, if the patient VFC Eligibility is NJ Family Care Plan B, C, & D.

Code	Description
	If Date of administration is **On/After** 07/01/2014 Provider must use private vaccines to administer NJ Family Care Plan B, C, & D patients.
NJIIS01	Not Available

HL7-defined Table 0091 – Query priority

Fields using this code set are expected to be I or empty, which indicates Immediate processing is expected.

Value	Description	Usage
I or Empty	Immediate Processing	Supported

HL7-defined Table 0103 – Processing ID

These codes are used in MSH-11.

Value	Description
P	Production
T	Training

HL7-defined Table 0119 – Order Control Codes

This code is used in ORC-1.

Value	Description	Usage
RE	Observations to follow	Supported

HL7-defined Table 0136 – Yes/No indicator

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

Value	Description
Y	Yes
N	No
<empty field> ||	Make no changes to the record in the receiving database. The sending system has no information on this field.

HL7-defined Table 0155 – Accept/Application Acknowledgment Conditions

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

Value	Description
AL	Always
NE	Never

HL7-defined Table 0162 – Route of Administration

These codes are used in RXR-1.

Value	Description
ID	Intradermal
IM	Intramuscular
IN	Intranasal
PO	Oral
SC	Subcutaneous

HL7-defined Table 0163 – Site of Administration

These codes are used in RXR-1.

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

User-defined Table 0189 – Ethnicity

These codes are used in PID-22 and NK1-28.

Value	Description
H	Hispanic or Latino
N	Not Hispanic
U	Unknown
2135-2	Hispanic or Latino
2186-5	Not Hispanic

HL7-defined Table 0190 – Address Type

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

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

HL7-defined Table 0200 – Name Type

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

Value	Description	Definition	Comment
L	Legal name	This is a person's official name. It is the primary name recorded in the IIS.	Used in PID-5 & NK1-2.
M	Maiden name	This is a woman's name before marriage.	Used in PID-6.

HL7-defined Table 0201 – Telecommunication Use Code

These codes are used in all XTN data types including PID-13, PID-14, NK1-5, and NK1-6.

Value	Description	Comment
PRN	Primary residence number	Used in PID-13 and NK1-5.
ORN	Other residence number	Used in PID-13 and NK1-5.
WPN	Work number	Used in PID-14 and NK1-6.
NET	Network (email) address	Used in PID-13, PID-14, NK1-5, and NK1-6.

HL7-defined Table 0202 – Telecommunication Equipment Type

These codes are used in all XTN data types including PID-13, PID-14, NK1-5, and NK1-6.

Value	Description
PH	Telephone
CP	Cellular phone
X.400	X.400 email address: Use only if telecommunication use code is NET

User-defined Table 0203 – Identifier Type

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

Value	Description
SR	State Registry ID
MR	Medical Record Number
BR	Birth Registry Number

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

NJIIS accepts a sub-set of the MVX codes listed on the CDC's IIS HL7 Standard Code Set MVX page (http://www2a.cdc.gov/vaccines/IIS/IISStandards/vaccines.asp?rpt=mvx). The MVX codes accepted by NJIIS (in RXA-17) as of the publication date of this Local IG are listed below.

MVX	Description	Notes
AB	Abbott Laboratories	ACTIVE 05/28/10
ACA	Acambis, Inc	INACTIVE 05/28/10
AD	Adams Laboratories, Inc.	ACTIVE 05/28/10
AKR	Akorn, Inc	ACTIVE 05/28/10
ALP	Alpha Therapeutic Corporation	ACTIVE 05/28/10
AR	Armour	INACTIVE 05/28/10
AVB	Aventis Behring L.L.C.	INACTIVE 05/28/10
AVI	Aviron	INACTIVE 05/28/10
BA	Baxter Healthcare Corporation-inactive	INACTIVE 05/28/10
BAH	Baxter Healthcare Corporation	ACTIVE 05/28/10
BAY	Bayer Corporation	INACTIVE 05/28/10
BP	Berna Products	INACTIVE 05/28/10
BPC	Berna Products Corporation	ACTIVE 05/28/10
BRR	Barr Laboratories	ACTIVE 03/20/11
BTP	Biotest Pharmaceuticals Corporation	ACTIVE 05/28/10
CEN	Centeon L.L.C.	INACTIVE 05/28/10
CHI	Chiron Corporation	INACTIVE 05/28/10
CMP	Celltech Medeva Pharmaceuticals	INACTIVE 05/28/10
CNJ	Cangene Corporation	ACTIVE 05/28/10
CON	Connaught	INACTIVE 05/28/10
CSL	CSL Behring, Inc	ACTIVE 05/28/10
DVC	DynPort Vaccine Company, LLC	ACTIVE 05/28/10
EVN	Evans Medical Limited	INACTIVE 05/28/10
GEO	GeoVax Labs, Inc.	ACTIVE 05/28/10
GRE	Greer Laboratories, Inc.	ACTIVE 05/28/10
GRF	Grifols	ACTIVE 09/05/13

MVX	Description	Notes
IAG	Immuno International AG	INACTIVE 05/28/10
IDB	ID Biomedical	ACTIVE 09/05/13
IM	Merieux	INACTIVE 05/28/10
INT	Intercell Biomedical	ACTIVE 05/28/10
IUS	Immuno-U.S., Inc.	ACTIVE 05/28/10
JNJ	Johnson and Johnson	ACTIVE 07/11/12
JPN	The Research Foundation for Microbial Diseases of Osaka University (BIKEN)	ACTIVE 05/28/10
KGC	Korea Green Cross Corporation	ACTIVE 05/28/10
LED	Lederle	INACTIVE 05/28/10
MA	Massachusetts Public Health Biologic Laboratories	INACTIVE 05/28/10
MBL	Massachusetts Biologic Laboratories	ACTIVE 05/28/10
MED	MedImmune, Inc.	ACTIVE 05/28/10
MIL	Miles	INACTIVE 05/28/10
MIP	Emergent BioDefense Operations Lansing	ACTIVE 05/28/10
MSD	Merck and Co., Inc.	ACTIVE 10/18/12
NAB	NABI	ACTIVE 05/28/10
NAV	North American Vaccine, Inc.	INACTIVE 05/28/10
NOV	Novartis Pharmaceutical Corporation	ACTIVE 05/28/10
NVX	Novavax, Inc.	ACTIVE 05/28/10
NYB	New York Blood Center	ACTIVE 05/28/10
ORT	Ortho-clinical Diagnostics	ACTIVE 05/28/10
OTC	Organon Teknika Corporation	ACTIVE 11/02/10
OTH	Other manufacturer	ACTIVE 05/28/10
PD	Parkedale Pharmaceuticals	INACTIVE 05/28/10
PFR	Pfizer, Inc	ACTIVE 05/28/10
PMC	sanofi pasteur	ACTIVE 05/28/10
PRX	Praxis Biologics	INACTIVE 05/28/10
PSC	Protein Sciences	ACTIVE 05/01/13
PWJ	PowderJect Pharmaceuticals	INACTIVE 05/28/10
SCL	Sclavo, Inc.	ACTIVE 05/28/10

MVX	Description	Notes
SI	Swiss Serum and Vaccine Inst.	INACTIVE 05/28/10
SKB	GlaxoSmithKline	ACTIVE 05/28/10
SOL	Solvay Pharmaceuticals	INACTIVE 05/28/10
TAL	Talecris Biotherapeutics	ACTIVE 05/28/10
UNK	Unknown manufacturer	ACTIVE 05/28/10
USA	United States Army Medical Research and Material Command	ACTIVE 05/28/10
VXG	VaxGen	INACTIVE 05/28/10
WA	Wyeth-Ayerst	INACTIVE 05/28/10
WAL	Wyeth	ACTIVE 05/28/10
ZLB	ZLB Behring	INACTIVE 05/28/10

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

NJIIS accepts a sub-set of the CVX codes listed on the CDC's IIS HL7 Standard Code Set CVX page (http://www2a.cdc.gov/vaccines/IIS/IISStandards/vaccines.asp?rpt=cvx). The CVX codes accepted by NJIIS (in RXA-5) as of the publication date of this Local IG are listed below.

CVX	Description	Notes
24	Anthrax	ACTIVE 5/28/10
28	DT (pediatric)	ACTIVE 5/28/10
20	DTaP	ACTIVE 5/28/10
106	DTaP, 5 pertussis antigens	ACTIVE 5/28/10
107	DTaP, unspecified formulation	INACTIVE 9/30/10
110	DTaP-Hep B-IPV	ACTIVE 5/28/10
50	DTaP-Hib	ACTIVE 5/28/10
120	DTaP-Hib-IPV	ACTIVE 5/28/10
130	DTaP-IPV	ACTIVE 5/28/10
01	DTP	INACTIVE 5/28/10
22	DTP-Hib	INACTIVE 5/28/10
102	DTP-Hib-Hep B	INACTIVE 5/28/10
161	Flu	ACTIVE 7/23/14
30	HBIG	ACTIVE 5/28/10
52	Hep A, adult	ACTIVE 5/28/10
83	Hep A, ped/adol, 2 dose	ACTIVE 5/28/10
84	Hep A, ped/adol, 3 dose	INACTIVE 5/28/10
31	Hep A, pediatric, unspecified formulation	INACTIVE 9/30/10
85	Hep A, unspecified formulation	INACTIVE 9/30/10
104	Hep A-Hep B	ACTIVE 5/28/10
08	Hep B, adolescent or pediatric	ACTIVE 5/28/10
42	Hep B, adolescent/high risk infant	ACTIVE 5/28/10
43	Hep B, adult	ACTIVE 5/28/10
44	Hep B, dialysis	ACTIVE 5/28/10
45	Hep B, unspecified formulation	INACTIVE 9/30/10
47	Hib (HbOC)	INACTIVE 5/28/10
46	Hib (PRP-D)	INACTIVE 5/28/10
49	Hib (PRP-OMP)	ACTIVE 5/28/10

CVX	Description	Notes
48	Hib (PRP-T)	ACTIVE 5/28/10
17	Hib, unspecified formulation	INACTIVE 9/30/10
51	Hib-Hep B	ACTIVE 5/28/10
62	HPV, quadrivalent	ACTIVE 5/28/10
137	HPV, unspecified formulation	INACTIVE 9/30/10
118	HPV2	ACTIVE 5/28/10
165	Human Papillomavirus 9-valent vaccine	ACTIVE 12/11/14
151	Influenza nasal, unspecified formulation	INACTIVE 1/28/13
135	Influenza, high dose seasonal	ACTIVE 5/28/10
153	Influenza, injectable, MDCK, preservative free	ACTIVE 7/17/13
158	Influenza, injectable, quadrivalent	ACTIVE 7/17/13
150	Influenza, injectable, quadrivalent, preservative free	ACTIVE 7/17/13
111	Influenza, live, intranasal	ACTIVE 7/17/13
149	Influenza, live, intranasal, quadrivalent	ACTIVE 7/17/13
155	Influenza, recombinant, injectable, preservative free	ACTIVE 7/17/13
141	Influenza, seasonal, injectable	ACTIVE 7/17/13
140	Influenza, seasonal, injectable, preservative free	ACTIVE 7/17/13
144	Influenza, seasonal, intradermal, preservative free	ACTIVE 7/17/13
15	Influenza, split (incl. purified surface antigen)	INACTIVE 9/30/10
88	Influenza, unspecified formulation	INACTIVE 9/30/10
16	Influenza, whole	INACTIVE 5/28/10
10	IPV	ACTIVE 5/28/10
66	Lyme disease	INACTIVE 5/28/10
04	M/R	INACTIVE 5/28/10
05	Measles	INACTIVE 8/31/10
162	Meningococcal B vaccine, fully recombinant	ACTIVE 11/3/14
163	Meningococcal B vaccine, recombinant, OMV, adjuvanted	ACTIVE 2/3/15
148	Meningococcal C/Y-HIB PRP	ACTIVE 7/11/12
147	Meningococcal MCV4, unspecified formulation	INACTIVE 2/08/12
136	Meningococcal MCV4O	ACTIVE 5/28/10
114	Meningococcal MCV4P	ACTIVE 5/28/10
32	Meningococcal MPSV4	ACTIVE 5/28/10
108	Meningococcal vaccine, unspecified formulation	INACTIVE 9/30/10

CVX	Description	Notes
03	MMR	ACTIVE 5/28/10
94	MMRV	ACTIVE 5/28/10
07	Mumps	ACTIVE 5/28/10
128	Novel Influenza-H1N1-09, all formulations	INACTIVE 8/28/10
02	OPV	INACTIVE 5/28/10
133	Pneumococcal Conjugate PCV 13	ACTIVE 5/28/10
100	Pneumococcal Conjugate PCV 7	ACTIVE 5/28/10
152	Pneumococcal Conjugate, unspecified formulation	INACTIVE 1/28/13
33	Pneumococcal polysaccharide PPV23	ACTIVE 5/28/10
109	Pneumococcal vaccine, unspecified formulation	INACTIVE 9/30/10
89	Poliovirus vaccine, unspecified formulation	INACTIVE 9/30/10
122	Rotavirus vaccine, unspecified formulation	INACTIVE 9/30/10
119	Rotavirus, monovalent	ACTIVE 5/28/10
116	Rotavirus, pentavalent	ACTIVE 5/28/10
6	Rubella	ACTIVE 5/28/10
38	Rubella/mumps	INACTIVE 5/28/10
138	Td (adult)	ACTIVE 9/30/10
113	Td (adult) preservative free	ACTIVE 9/30/10
09	Td (adult), adsorbed	ACTIVE 8/20/10
139	Td(adult) unspecified formulation	INACTIVE 9/30/10
115	Tdap	ACTIVE 5/28/10
21	Varicella	ACTIVE 5/28/10
121	Zoster	ACTIVE 5/28/10

User-defined Table 0296 – Language

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

Value	Description
AR	Arabic
ASE	American Sign Language
BLU	Hmong
BN	Bengali
CJD	Chamorro

Value	Description
CS	Czech
DE	German
EL	Greek
EN	English
ES	Spanish
FA	Farsi (Persian)
FR	French
HI	Hindi
HR	Croatian
HU	Hungarian
HY	Armenian
ID	Indonesian
ILO	Iilocano
IT	Italian
JA	Japanese
KM	Cambodian (Khmer)
KO	Korean
LO	Laotian
NL	Dutch
OTH	Other
PL	Polish
PT	Portuguese
RO	Romanian
RU	Russian
SK	Slovak
SM	Samoan
SO	Somali
SR	Serbian
TH	Thai
TL	Tagalog
TO	Tongan
UK	Ukranian
UR	Urdu
VI	Vietnamese
YI	Yiddish
YUH	Chinese, Cantonese
ZH	Chinese, Mandarin

HL7-defined Table 0322 – Completion Status

This code is used in RXA-20.

Value	Description
CP	Complete

User-defined Table 0363 – Assigning Authority

This code is used in PID-3.4.1 when PID-3.5 is "SR".

Code	Grantee
NJIIS	New Jersey Immunization Information System

HL7-defined Table 0396 – Name of Coding System

Only selected values listed. See HL7 version 2.3.1 Table 0396 for other values. Use is CE data types to denote the **coding** system used for coded values.

Value	Description
CVX	CDC Vaccine Codes
MVX	CDC Vaccine Manufacturer Codes

HL7-defined Table 0516 – Error Severity Code

This code is used in ERR-4.

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

User-defined Table 0533 – Application Error Code

This code is used in ERR-5.

Error Code	Error Description	Error Type		Error Code	Error Description	Error Type
13101	NJIIS PROVIDER SEQ NOT FOUND IN REQUEST.	Error		13189	NK1 LAST NAME IS MISSING.	Error
13102	NJIIS PROVIDER SEQ SHOULD BE A NUMBER.	Error		13190	NK1 FIRST NAME IS MISSING.	Error
13103	NJIIS PROVIDER SEQ IS INVALID.	Error		13191	DOSE ADMIN START TIME IS MISSING.	Error
13104	PATIENT LAST NAME NOT FOUND IN REQUEST.	Error		13192	DOSE ADMIN START TIME FORMAT IS INVALID.	Error
13105	PATIENT FIRST NAME NOT FOUND IN REQUEST.	Error		13193	DOSE ADMIN START TIME CANNOT BE EARLIER THAN DATE OF BIRTH OR IN FUTURE DATE.	Error
13106	PATIENT DATE OF BIRTH NOT FOUND IN REQUEST.	Error		13194	DOSE CVX CODE IS MISSING.	Error
13107	PATIENT DATE OF BIRTH FORMAT IS INVALID. CORRECT FORMAT IS YYYYMMDD	Error		13195	DOSE CVX CODE IS INVALID. NO MATCHING NJIIS VACCINE ID FOUND.	Error
13108	PATIENT DATE OF BIRTH CAN NOT BE IN FUTURE DATE.	Error		13196	DOSE CVX CODE NAME IS MISSING.	Error
13109	PATIENT AGE CAN NOT BE 120+ YEARS.	Error		13197	DOSE CVX CODE NAME IS INVALID.	Error
13110	PATIENT GENDER NOT FOUND IN REQUEST.	Error		13198	DOSE DOSAGE AMOUNT IS MISSING.	Error
13111	PATIENT GENDER IS INVALID.	Error		13199	DOSE DOSAGE UNIT IS MISSING.	Error
13112	PATIENT RACE IDENTIFIER IS INVALID.	Warning		13200	DOSE ADMIN NOTES CODE IS MISSING.	Error
13113	PATIENT PRIMARY LANGUAGE IDENTIFIER IS INVALID.	Warning		13201	DOSE ADMIN NOTES CODE SYSTEM IS MISSING.	Error
13114	PATIENT ETHNICITY IS INVALID.	Warning		13202	DOSE ADMIN NOTES CODE SYSTEM IS INVALID. NOT SUPPORTED NY NJIIS.	Error
13115	PATIENT PLURALITY IS INVALID.	Warning		13203	DOSE ADMIN PROVIDER ID IS NOT VALID NUMERICAL ID.	Error
13116	PATIENT BIRTH ORDER IS INVALID.	Warning		13204	DOSE ADMIN PROVIDER ID IS DIFFERENT FROM MESSAGE HEADER PROVIDER ID.	Error
13117	PATIENT CONSENT IS INVALID.	Warning		13205	NEW IMMUNIZATION DOSE LOT NUMBER IS MISSING.	Error
13118	PATIENT CONSENT DATE NOT FOUND.	Error		13206	NEW IMMUNIZATION DOSE LOT NUMBER LENGTH EXCEEDS 16 CHARACTERS.	Error

Error Code	Error Description	Error Type		Error Code	Error Description	Error Type
13119	PATIENT CONSENT DATE IS INVALID.	Error		13207	NEW IMMUNIZATION DOSE LOT EXPIRATION DATE IS MISSING.	Warning
13120	PATIENT PV1 FINANCIAL CODE IS INVALID.	Error		13208	NEW IMMUNIZATION DOSE LOT EXPIRATION DATE FORMAT IS INVALID.	Warning
13121	PATIENT PV1 FINANCIAL CODE EFFECTIVE DATE IS NULL.	Error		13209	NEW IMMUNIZATION DOSE LOT MVX CODE IS MISSING.	Warning
13122	PATIENT PV1 FINANCIAL CODE EFFECTIVE DATE IS INVALID.	Error		13210	NEW IMMUNIZATION DOSE LOT MVX CODE IS INVALID.	Warning
13123	PATIENT ID NUMBER NOT FOUND.	Warning		13211	IMMUNIZATION DOSE COMPLETION STATUS IS INVALID. NOT SUPPORTED BY NJIIS.	Error
13124	PATIENT ID NUMBER ASSIGNING AUTHORITY NAMESPACE ID NOT FOUND.	Warning		13212	IMMUNIZATION DOSE ACTION CODE IS INVALID. NOT SUPPORTED BY NJIIS.	Warning
13125	PATIENT ID IDENTIFIER TYPE CODE NOT FOUND.	Warning		13213	IMMUNIZATION DOSE ADMIN ROUTE IS INVALID. NOT SUPPORTED BY NJIIS.	Warning
13126	PATIENT ID IDENTIFIER ID NUMBER IS INVALID.	Warning		13214	IMMUNIZATION DOSE ADMIN SITE IS INVALID. NOT SUPPORTED BY NJIIS.	Warning
13127	PATIENT ID ASSIGNING AUTHORITY IS INVALID. IT SHOULD BE NJIIS WHEN ID TYPE CODE IS SR.	Warning		13215	PV1 FINANCIAL CODE IS MISSING.	Warning
13128	IF PATIENT ID IDENTIFIER TYPE CODE MR, ASSIGNING AUTHORITY SHOULD BE VALID NJIIS PROVIDER ID.	Error		13216	PV1 FINANCIAL CODE IS INVALID. NOT SUPPORTED BY NJIIS.	Warning
13129	PATIENT ID ASSIGNING AUTHORITY IS NOT A VALID NJIIS PROVIDER ID.	Error		13217	NJIIS PROVIDER PROFILE SETUP IS INCOMPLETE.	Error
13130	PATIENT ID IDENTIFIER TYPE CODE HAS UNSUPPORTED VALUE.	Warning		13218	PATIENT CONSENT IS MISSING. REQUIRED FOR PATIENTS BORN BEFORE 01/01/1998	Error
13131	PATIENT HOME PHONE TELECOM USE CODE IS MISSING.	Error		13219	PATIENT BIRTH ORDER IS MISSING.	Warning
13132	PATIENT BUSINESS PHONE TELECOM USE CODE IS MISSING.	Error		13220	PATIENT BIRTH ORDER CANNOT BE > 1 WHEN PLURALITY IS N.	Warning
13133	NK1 HOME PHONE TELECOM USE CODE IS MISSING.	Error		13221	GIVEN NJIIS PATIENT REGISTRY ID IS INVALID.	Error
13134	NK1 BUSINESS PHONE TELECOM USE CODE IS MISSING.	Error		13222	PATIENT CONSENT RELATIONSHIP IS MISSING.	Error

Error Code	Error Description	Error Type		Error Code	Error Description	Error Type
13135	PATIENT HOME PHONE TELECOM USE CODE IS INVALID.	Error		13223	MESSAGE PROCESSING ID IS MISSING.	Error
13136	NK1 HOME PHONE TELECOM USE CODE IS INVALID.	Error		13224	MESSAGE PROCESSING ID IS INVLID.	Error
13137	PATIENT BUSINESS PHONE TELECOM USE CODE IS INVALID.	Error		13225	MESSAGE PROCESSING ID IS INVALID. PRODUCTION MESSAGE ON TRAINING SERVER.	Warning
13138	NK1 BUSINESS PHONE TELECOM USE CODE IS INVALID.	Error		13226	MESSAGE PROCESSING ID IS INVALID. TRAINING MESSAGE ON PRODUCTION SERVER.	Error
13139	PATIENT HOME PHONE TELECOM EQUIPMENT TYPE IS MISSING.	Error		13227	DOB, GENDER, LAST, FIRST NAME MATCH FAILED.	Error
13140	PATIENT BUSINESS PHONE TELECOM EQUIPMENT TYPE IS MISSING.	Error		13228	NK1 CONTACT RELATIONSHIP IS MISSING.	Error
13141	NK1 HOME PHONE TELECOM EQUIPMENT TYPE IS MISSING.	Error		13229	NK1 CONTACT RELATIONSHIP IS INVALID.	Error
13142	NK1 BUSINESS PHONE TELECOM EQUIPMENT TYPE IS MISSING.	Error		13230	PATIENT CONSENT DATE CAN NOT BE IN FUTURE DATE.	Error
13143	PATIENT HOME PHONE TELECOM EQUIPMENT TYPE IS INVALID.	Error		13231	PV1 EFFECTIVE DATE IS MISSING.	Warning
13144	NK1 HOME PHONE TELECOM EQUIPMENT TYPE IS INVALID.	Error		13232	PV1 EFFECTIVE DATE FORMAT IS INVALID.	Warning
13145	PATIENT BUSINESS PHONE TELECOM EQUIPMENT TYPE IS INVALID.	Error		13233	PV1 EFFECTIVE DATE CANNOT BE EARLIER THAN DATE OF BIRTH OR IN FUTURE DATE.	Warning
13146	NK1 BUSINESS PHONE TELECOM EQUIPMENT TYPE IS MISSING.	Error		13234	DOSE ADMIN NOTES CODE IS INVALID.	Error
13147	PATIENT HOME EMAIL IS MISSING.	Error		13235	DOSE CVX CODE WAS DEACTIVATED BEFORE DOSE ADMIN DATE.	Error
13148	PATIENT BUSINESS EMAIL IS MISSING.	Error		13236	IMMUNIZATION DOSE ACTION CODE IS NULL.	Warning
13149	NK1 HOME EMAIL IS MISSING.	Error		1001	Required segment missing	Error
13150	NK1 BUSINESS EMAIL IS MISSING.	Error		1002	Required group missing	Error
13151	PATIENT HOME EMAIL FORMAT IS INVALID.	Error		1005	Failed to parse embedded message	Error
13152	PATIENT BUSINESS EMAIL FORMAT IS INVALID.	Error		1006	Required field missing	Error
13153	NK1 HOME EMAIL FORMAT IS INVALID.	Error		1009	Extra data found after field	Error

Error Code	Error Description	Error Type		Error Code	Error Description	Error Type
13154	NK1 BUSINESS EMAIL FORMAT IS INVALID.	Error		1010	Extra data found after composite	Error
13155	PATIENT HOME PHONE AREA CODE IS MISSING.	Error		1011	Specified field count does not match actual count	Error
13156	PATIENT BUSINESS PHONE AREA CODE IS MISSING.	Error		1012	Field value does not match regular expression	Error
13157	NK1 HOME PHONE AREA CODE IS MISSING.	Error		1013	Field too long, truncated	Error
13158	NK1 BUSINESS PHONE AREA CODE IS MISSING.	Error		1015	Invalid character(s) in field	Error
13159	PATIENT HOME PHONE AREA CODE IS INVALID.	Error		1016	Not enough messages	Error
13160	PATIENT BUSINESS PHONE AREA CODE IS INVALID.	Error		1017	Too many messages	Error
13161	NK1 HOME PHONE AREA CODE IS INVALID.	Error		1018	Not enough repeats	Error
13162	NK1 BUSINESS PHONE AREA CODE IS INVALID.	Error		1019	Too many repeats	Error
13163	PATIENT HOME PHONE LOCAL_NUMBER IS MISSING.	Error		1020	Repeat separator not defined, only first will be output	Error
13164	PATIENT BUSINESS PHONE LOCAL_NUMBER IS MISSING.	Error		1021	Only one item allowed in choice group	Error
13165	NK1 HOME PHONE LOCAL_NUMBER IS MISSING.	Error		1022	Extra data found after segment	Error
13166	NK1 BUSINESS PHONE LOCAL_NUMBER IS MISSING.	Error		1023	Message Item Match-List failed to match correctly	Error
13167	PATIENT HOME PHONE LOCAL_NUMBER IS INVALID.	Error		1024	Paired Syntax Rule Violated	Error
13168	PATIENT BUSINESS PHONE LOCAL_NUMBER IS INVALID.	Error		1025	Conditional Syntax Rule Violated	Error
13169	NK1 HOME PHONE LOCAL_NUMBER IS INVALID.	Error		1026	Conditional List Syntax Rule Violated	Error
13170	NK1 BUSINESS PHONE LOCAL_NUMBER IS INVALID.	Error		1027	Required Syntax Rule Violated	Error
13171	PATIENT ADDRESS TYPE IS MISSING.	Error		1028	Exclusive Syntax Rule Violated	Error
13172	NK1 ADDRESS TYPE IS MISSING.	Error		1029	Not enough message items in unordered group	Error
13173	PATIENT ADDRESS TYPE IS INVALID.	Warning		1030	Too many message items in unordered group	Error

Error Code	Error Description	Error Type		Error Code	Error Description	Error Type
13174	NK1 ADDRESS TYPE IS INVALID.	Warning		1031	Array has less than minimum items	Error
13175	PATIENT ADDRESS LINE1 IS MISSING.	Error		1032	Array has more than maximum items	Error
13176	NK1 ADDRESS LINE1 IS MISSING.	Error		1033	Array separator not defined, only the first will be output	Error
13177	PATIENT ADDRESS CITY IS MISSING.	Error		1034	Field value violates validation regular expression	Error
13178	NK1 ADDRESS CITY IS MISSING.	Error		1036	Required According to Situational Rule	Error
13179	PATIENT ADDRESS STATE IS MISSING.	Error		1037	Specified field value does not match validation equation value	Error
13180	NK1 ADDRESS STATE IS MISSING.	Error		1038	Field not found in name/value pair segment	Error
13181	PATIENT ADDRESS STATE IS INVALID.	Error		1039	No field name provided in name/value pair segment	Error
13182	NK1 ADDRESS STATE IS INVALID.	Error		1040	Field did not match the 'else' advanced validation rule regular expression	Error
13183	PATIENT ADDRESS ZIP IS NULL.	Error		1041	Field did not match regular expression for advanced validation rule	Error
13184	NK1 ADDRESS ZIP IS NULL.	Error		1042	Unknown embedded message found	Error
13185	PATIENT ADDRESS ZIP IS INVALID.	Error		1045	Character not in allowable range	Error
13186	NK1 ADDRESS ZIP IS INVALID.	Error		1051	Specified number of repeats in repeat counter does not match actual number of repeats	Error
13187	NK1 NAME TYPE CODE IS MISSING.	Warning		1052	Repeat counter value was not an integer	Error
13188	NK1 NAME TYPE CODE IS INVALID.	Warning				

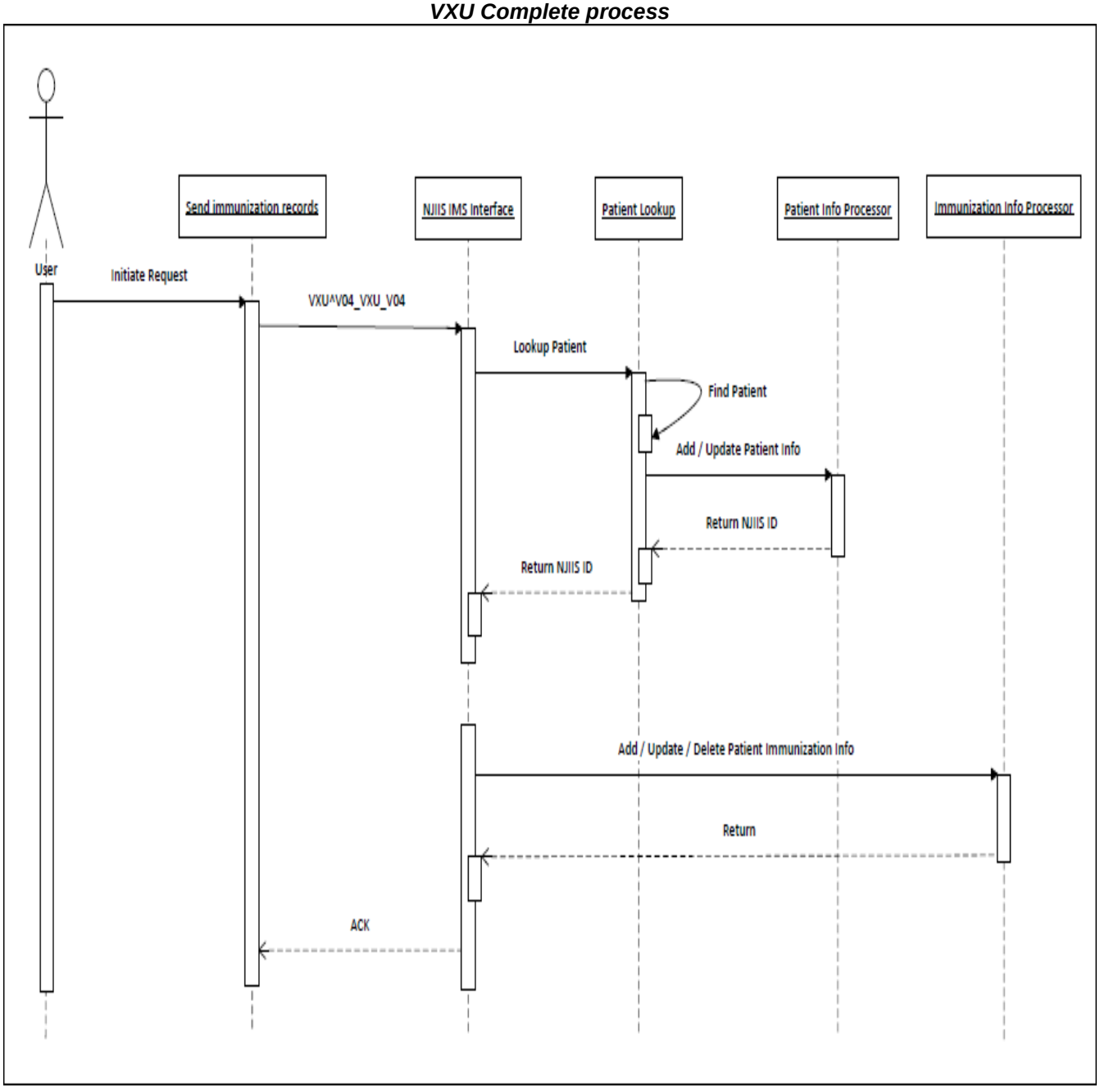
CDC-defined NIP001 – Immunization Information Source

This code is used in RXA-9.

Value	Description
00	New immunization record
01	Historical information - source unspecified
02	Historical information - from other provider
03	Historical information - from parent's written record
04	Historical information - from parent's recall
05	Historical information - from other registry
06	Historical information - from birth certificate
07	Historical information - from school record
08	Historical information - from public agency

Appendix B: Unsolicited Vaccine Record Update (VXU) Sequence Diagram

VXU Complete process



Appendix C: Example Message

VXU Example Message #1

Brief Description

This example VXU message is for a patient (existing in NJIIS) who was born on May 7, 2012 and NOT part of a multiple birth. This message includes three reported new immunizations (Flu-Adult, Tdap, and Hep B). Because the NJIIS IMS ignores the PD1 segment for patients born on or after January 1, 1998, the PD1 segment is not included in this example VXU message. The patient has vaccines administered from three different vaccine sources (financial codes), Medicaid/Medicaid-Managed Care, Not VFC Eligible, and Not Available. The provider has maintained his Private Inventory with NJIIS, all the associated Inventory will be decremented for the three newly administered immunizations.

Example Message

MSH|^~\&|My Office|10304|NJIIS|NJDOH|20140509122818||VXU^V04|103040109052014|T|2.3.1||||AL|||||

PID|||123511158^^^10304^MR~3268888^^^NJIIS^SR||Barrel^Sandy^Plaid^^^^L|Rose^Mau^^^^^M|20120507|F||2131-1^Other Race^HL70005|4 green st^^Iselin^NJ^08840^USA^L||^PRN^PH^^^732^5485005~^ORN^CP^^^732^5451512~^NET^X.400^Sandy@mymail.com||NL^Dutch^HL70296||||||U^NOT HISPANIC^HL70189||N||

NK1|1|Masha^Suzy^^^^^L|SIS^Sister^HL70063|56 Princeton-heightstown rd^Apt 143224^Princeton junction^NJ^08820^^C|^PRN^PH^^^609^3223334~^ORN^CP^^^732^5361212~^NET^X.400^onnmy.test@gggmaill.com|^WPN^PH^^^201^8551002~^WPN^CP^^^744^5551442~^NET^X.400^SISSUZYh@unrealemail.com||||||||||

PV1||||||||||||||||||||V02^20131111~V01^20140506~NJIIS01^20130715|

RXA|0|1|20131111||144^Flu-Adult^CVX|0.5|ML^^ISO+||00^New immunization record^NIP001|^Sherli^Snerld|^^^10304||||FFLLUUAA1|20150120|NAB^NABI^MVX||||A

RXR|IN^INTRANASAL^HL70162|RVL^RIGHT VASTUS LATERALIS^HL70163

RXA|0|1|20140506||115^Tdap^CVX|0.5|ML^^ISO+||00^New immunization record^NIP001|^ROster^Patty|^^^10304||||TTDDAAPP1|20141231|ACA^ACAMBIS^MVX||||A

RXA|0|1|20130715||08^HepB^CVX|0.5|ML^^ISO+||00^New immunization record^NIP001|^Peeler^Tenifa|^^^10304||||HHEEPPBB1|20150202|AVI^AVIRON^MVX||||A

RXR|IM^INTRAMUSCULAR^HL70162|LT^LEFT THIGH^HL70163

ACK for VXU Sample message # 1

MSH|^~\&|NJIIS|NJDOH|My Office|10304|20140530115125||ACK^V04^ACK|103040109052014|T|2.3.1|1||NE|NE

MSA|AA|103040109052014

ERR|||0|I||NJIIS_REGISTRY_ID|3268888

VXU Example Message #2

Brief Description

This example VXU message is for a patient who was born on October Twenty, 1990 and is a twin (i.e., a part of a multiple birth). This message includes one History shot (IPV) and one newly reported immunization (Rota - 2 Dose). This patient is not an existing patient in NJIIS. Because NJIIS requires the PD1 segment for new patients born before January 1, 1998, the PD1 segment is included in this example VXU message.

Example Message

MSH|^~\&|My Office|10304|NJIIS|NJDOH|20140509122818||VXU^V04|103040109052014|T|2.3.1||||AL|||||

PID|||123511158^^^10304^MR ||Barrel^Sandy^Plaid^^^^L|Rose^Mau^^^^^M|19901020|F||2131-1^Other Race^HL70005|4 green st^^Iselin^NJ^08840^USA^L||^PRN^PH^^^732^5485005~^ORN^CP^^^732^5451512~^NET^X.400^Sandy@mymail.com||NL^Dutch^HL70296||||||U^NOT HISPANIC^HL70189||Y|2|

PD1||||||||||||Y|19980101|||A||||||

NK1|1|Ooopa^Bekky^^^^^L|SPO^Spouse^HL70063|1002 cobbler St APT No 224^^Princeton^NJ^08441^^C|^PRN^PH^^^609^3223654||||||||||||

RXA|0|1|20131119||10^IPV^CVX|0.5|ML^^ISO+||02^Historical immunization record^NIP001|^Santiago^Mariette||||||||||A

RXA|0|1|20130929||119^Rota - 2 Dose^CVX|0.5|ML^^ISO+||00^New immunization record^NIP001|^koop^Mary|^^^10304||||RROOTTAA1|20141231|ACA^ACAMBIS, INC^MVX||||A

RXR|ID^Intradermal^HL70162|LA^LEFT Upper Arm^HL70163

ACK for VXU Sample message # 2

MSH|^~\&|NJIIS|NJDOH|My Office|10304|20140530114125||ACK^V04^ACK|103040109052014|T|2.3.1|2||NE|NE

MSA|AA|103040109052014

ERR|||0|I||NJIIS_REGISTRY_ID|3271712