*Local Implementation Guide for HL7 2.5.1 Immunization Messaging*

 Version 1.3

*11/22/11*

VERSION HISTORY

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| --- | --- | --- | --- |
| **Version #** | **Implemented****By** | **Revision****Date** | **Reason** |
| 0.1 | Eric Larson | 02/24/2011 – 4/08/2011 | Initial creation through peer feedback by IIS and EHR community. |
| 1.0 | Eric Larson | 04/11/2011 | Group consensus to move forward into version 1.0 after review cycles. |
| 1.1 | Eric Larson |  | No Version 1.1 was published. Jumped from 1.0 to 1.3 to align with CDC IG versioning |
| 1.2 | Eric Larson |  | No Version 1.2 was published. Jumped from 1.0 to 1.3 to align with CDC IG versioning |
| 1.3 | Eric Larson | 09/13/2011 | Updated per the updated release of the CDC HL7 Implementation Guide. |

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# Introduction

Note: A Local implementation guide (IG) is an important tool for assuring smooth communication with partners. A local implementation guide should contain local code values for those tables where the user may add values. This is not the case for many of the HL7 tables. A Local IG is the appropriate place to document local business rules that are outside of the actual HL7 message. For instance, if your system always requires a new record for a person to contain at least one immunization record (RXA segment), your local IG is the place to document that.

One of the areas that must be addressed by this Local implementation guide is usage (Required, optional, not supported, etc…). The CDC IG defines Usage in the “Basic Message Construction Rules” section of Chapter 3. The CDC IG applies Usage in several tables. In all of those tables, the Usage column can be one of six values. This Local implementation guide can change the Usage from the CDC IG Usage to a usage in line with your local IIS. However, it is not acceptable to relax Usage. The table below details what options exist for Usage.

| CDC IG Usage Value | Possible Usage Values in this Local IG |
| --- | --- |
| R | R |
| RE | RE or R |
| C | C |
| CE | CE or C |
| O | X, O, CE, C, RE, R |
| X | Should remain X. |

A second area that must be addressed is cardinality ([0..0], [0..1], [0..\*], etc...). The CDC IG defines cardinality in the “Message Attributes Common to All Messages” section of Chapter 3. In some cases, the Usage will determine the cardinality. In other cases, cardinality must be clearly defined based on your IIS. Messages within the CDC IG are defined to be repeating or non-repeating. When considering this local implementation guide, it is acceptable to restrict a repeating field (i.e. [0..\*] -> [1..4]), but it is not acceptable to make a non-repeating field into a repeating field (i.e. [0..1] -> [0..\*]).

While there is freedom to further constrain the CDC IG in your local IG, it should be understood that the further your IIS deviates from the CDC IG, the more difficult it will be for sending systems to message with your IIS.

All of the text in this format and color throughout this document is for the local IIS to aid in creating your Local IG. Once you have finished your document, this text can be deleted.

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



Figure 1: HL7 Controlling Document Hierarchy

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

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

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

## Intended Audience

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

## Scope

Note: The scope statement should be reviewed to ensure it is in line with your system. For example, it is possible your system does not have immediate plans for processing QBP’s. If that is the case, then the bullets that refer to requesting and responding to immunizations histories should be removed.

The following bulleted list is for illustrative purposes only and will likely need to be adjusted for your implementation guide. This Local IG is intended to facilitate the exchange of immunization records between external Health Systems and ***<System Name Here>***. This includes:

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

Note: It is also important to specify what is not in scope. Look at the CDC IG to see what was out of scope for that document. Some of those out of scope items, might be in scope for your IG, others might remain out of scope.

## Organization and Flow

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

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

* Data type specifications from chapter 3 of the CDC IGhave not been redefined and usage has not been changed
* Standardized vocabulary is supported as specified in the CDC IG
* To the extent possible, data sets and business rules will adhere to the CDC IG.

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

# Actors, Goals, and Messaging Transactions

Note: This section will define the messages supported by your system. The list of Messages supported in this section should synchronize with the scope statement above. In the CDC IG, these are defined in Use Cases. It would be beneficial to use the use cases defined in the CDC IG for a uniform message to implementers.

If you do not implement all of the defined use cases from the CDC IG, it is recommended that you make note of that in your local IG to avoid confusion about what is and what is not supported.

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

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

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

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

# HL7 Messaging Infrastructure

Note: If your local system does not follow all of the terms and definitions in Chapter 3 of the CDC IG, then those differences should be clearly defined in this section. Remember it is acceptable to further constrain (tighten) the CDC IG, but it is not acceptable to relax (loosen) the CDC IG. Suggested text for this Local Implementation Guide when the HL7 Messaging Infrastructure follows the CDC IG is below.

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

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

| **Usage Code** | **Interpretation** | **Comment** |
| --- | --- | --- |
| R | Required | A conforming sending application shall populate all “R” elements with a non-empty value. Conforming receiving application shall process or ignore the information conveyed by required elements. A conforming receiving application must not raise an error due to the presence of a required element, but may raise an error due to the absence of a required element.  |
| RE | Required but may be empty | The element may be missing from the message, but it must be sent by the sending application if there is relevant data. A conforming sending application should be capable of providing all "RE" elements. If the conforming sending application knows the required values for the element, then it must send that element. If the conforming sending application does not know the required values, then that element will be omitted. Receiving applications will be expected to process or ignore data contained in the element, but must be able to successfully process the message if the element is omitted (no error message should be generated because the element is missing).  |
| C | Conditional | This usage has an associated condition predicate. This predicate is an attribute within the message. **If the predicate is satisfied:** A conformant sending application must always send the element. A conformant receiving application must process or ignore data in the element. It may raise an error if the element is not present. **If the predicate is NOT satisfied:** A conformant sending application must NOT send the element. A conformant receiving application must NOT raise an error if the condition predicate is false and the element is not present, though it may raise an error if the element IS present.  |
| CE | Conditional but may be empty | This usage has an associated condition predicate. This predicate is an attribute within the message. **If the predicate is satisfied:** If the conforming sending application knows the required values for the element, then the application must send the element. If the conforming sending application does not know the values required for this element, then the element shall be omitted. The conforming sending application should be capable of knowing the element (when the predicate is true) for all ‘CE’ elements. If the element is present, the conformant receiving application shall process or ignore the values of that element. If the element is not present. The conformant receiving application shall not raise an error due to the presence or absence of the element. **If the predicate is not satisfied:** The conformant sending application shall not populate the element. The conformant receiving application may raise an application error if the element is present. |
| O | Optional | This element may be present if specified in local profile. Local partners may develop profiles that support use of this element. In the absence of a profile, conformant sending applications will not send the element. Conformant receiving applications will ignore the element if it is sent, unless local profile specifies otherwise. Conformant receiving applications may not raise an error if it receives an unexpected optional element. |
| X | Not Supported | The element is not supported. Sending applications should not send this element. Receiving applications should ignore this element if present. A receiving application may raise an error if it receives an unsupported element. Any profile based on this Guide should not specify use of an element that is not supported in this Guide. |

# HL7 Data Types

Note: If your local system does not adhere to all of the HL7 Data Types in Chapter 4 of the CDC IG, then those differences should be clearly defined in this section. Remember it is acceptable to further constrain (tighten) the CDC IG, but it is not acceptable to relax (loosen) the CDC IG.

For example, The Financial Class (FC) Data Type is defined as follows:

| SEQ | LEN | Data Type | Usage | Value Set | COMPONENT NAME | COMMENTS |
| --- | --- | --- | --- | --- | --- | --- |
| 1 | 20 | IS | R | 0064 | Financial Class Code |  |
| 2 |  | TS | RE |  | Effective Date |  |

It is acceptable to redefine the “Usage” of the “Effective Date” from “RE” to “R”, but it is not acceptable to redefine the “Usage” of the “Financial Class Code” from “R” to “RE”. The first example further constrains; the second example loosens. Suggested text for the Local Implementation Guide when the HL7 Data Types follow those in the CDC IG is below.

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

# Segments and Message Details

Note: This section is a direct copy from Chapter 5 of the CDC IG. However, new columns have been added where your local system may have differences. Look at the guidance text in the introduction, it is possible to define locally Cardinality and Usage under certain conditions.

The CDC IG contains no local business rules. Local business rules can be vitally important to a successful interface between an external system and your specific IIS. It is in this chapter and the next chapter where local business rules important for interoperability can be documented. Where to best place these business rules depends greatly on the business rules themselves and as such will be left to the local writer of this guide to properly document.

The CDC IG contains a table for each segment. It is very possible that not all message types will be supported depending upon you IIS. It is also possible that your IIS will support additional segments. Remember that the goal is an unambiguous Implementation Guide when reading the two documents in conjunction with each other. It is important to detail differences between this Local Guide and the CDC IG. That is, if you do not plan to support a particular segment (BHS, BTS for example), then it would be helpful to your audience to state lack of support for a particular segment vs. omission of that segment.

For example, the Next of Kin (NK1) Segment could be defined in the following manner. It is important to note that these are example changes for an example system and not a suggestion for your system.

Table 5‑X -Next of Kin Segment (NK1)

| SEQ | LEN | Data Type | CDC IG Cardinality | <System Name> Cardinality | Value set | ELEMENT NAME | CDC IG Usage | <System Name> Usage | Constraint |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1 | 4 | SI | [1..1] | [1..1] |  | Set ID - NK1 | R | R |  |
| 2 |  | XPN | [1..\*] | [1..1] |  | Name | R | R | Example System only accepts one name. |
| 3 |  | CE | [1..1] | [1..1] | [0063](#HL70063) | Relationship | R | R |  |
| 4 |  | XAD | [0..\*] | [1..1] |  | Address | RE | R | The first instance shall be the primary address. |
| 5 |  | XTN | [0..\*] | [1..2] |  | Phone Number | RE | R | The first instance shall be the primary phone number. The second phone number will be stored as a “secondary phone number”. The first instance is required. Subsequent instances are optional. |
| 6 |  | XTN | [0..\*] | [0..1] |  | Business Phone Number | O | RE | The first and only instance shall be the business phone number. |
| 7 |  | CE | [0..1] | [0..0] | 0131 | Contact Role | O | X |  |
| 8 | 8 | DT | [0..1] | [0..0] |  | Start Date | O | X |  |
| 9 | 8 | DT | [0..1] | [0..0] |  | End Date | O | X |  |
| 10 | 60 | ST | [0..1] | [0..0] |  | Next of Kin / Associated Parties Job Title | O | X |  |
| 11 |  | JCC | [0..1] | [0..0] | 0327/0328 | Next of Kin / Associated Parties Job Code/Class | O | X |  |
| 12 |  | CX | [0..1] | [0..0] |  | Next of Kin / Associated Parties Employee Number | O | X |  |
| 13 |  | XON | [0..1] | [0..0] |  | Organization Name - NK1 | O | X |  |
| 14 |  | CE | [0..1] | [0..0] | [0002](#HL70002) | Marital Status | O | X |  |
| 15 | 1 | IS | [0..1] | [0..0] | [0001](#HL70001) | Administrative Sex | O | X |  |
| 16 |  | TS | [0..1] | [0..0] |  | Date/Time of Birth | O | X |  |
| 17 | 2 | IS | [0..1] | [0..0] | 0223 | Living Dependency | O | X |  |
| 18 | 2 | IS | [0..1] | [0..0] | [0009](#HL70009) | Ambulatory Status | O | X |  |
| 19 |  | CE | [0..1] | [0..0] | 0171 | Citizenship | O | X |  |
| 20 |  | CE | [0..1] | [1..1] | [0296](#HL70296) | Primary Language | O | R | This is required and will be used to generate language specific reminder and recall letters. |
| 21 | 2 | IS | [0..1] | [0..0] | [0220](#HL70220) | Living Arrangement | O | X |  |
| 22 |  | CE | [0..1] | [0..0] | [0215](#HL70215) | Publicity Code | O | X |  |
| 23 | 1 | ID | [0..1] | [0..0] | 0136 | Protection Indicator | O | X |  |
| 24 | 2 | IS | [0..1] | [0..0] | 0231 | Student Indicator | O | X |  |
| 25 |  | CE | [0..1] | [0..0] | [0006](#HL70006) | Religion | O | X |  |
| 26 |  | XPN | [0..1] | [0..0] |  | Mother’s Maiden Name | O | X |  |
| 27 |  | CE | [0..1] | [0..0] | [0212](#HL70212) | Nationality | O | X |  |
| 28 |  | CE | [0..1] | [0..0] | [0189](#HL70189) | Ethnic Group | O | X |  |
| 29 |  | CE | [0..1] | [0..0] | 0222 | Contact Reason | O | X |  |
| 30 |  | XPN | [0..1] | [0..0] |  | Contact Person’s Name | O | X |  |
| 31 |  | XTN | [0..1] | [0..0] |  | Contact Person’s Telephone Number | O | X |  |
| 32 |  | XAD | [0..1] | [0..0] |  | Contact Person’s Address | O | X |  |
| 33 |  | CX | [0..1] | [0..0] |  | Next of Kin/Associated Party’s Identifiers | O | X |  |
| 34 | 2 | IS | [0..1] | [0..0] | 0311 | Job Status | O | X |  |
| 35 |  | CE | [0..1] | [0..0] | [0005](#HL70005) | Race | O | X |  |
| 36 | 2 | IS | [0..1] | [0..0] | [0295](#HL70295) | Handicap | O | X |  |
| 37 | 16 | ST | [0..1] | [0..0] |  | Contact Person Social Security Number | O | X |  |
| 38 |  | ST | [0..1] | [0..0] |  | Next of Kin Birth Place | O | X |  |
| 39 | 2 | IS | [0..1] | [0..0] | 0099 | VIP Indicator | O | X |  |

The changes made to the NK1 Segment by the example system are defined below:

1. The first and possibly the most important change was to change all of the CDC IG fields from “O” to “X” as the example system has no intention of supporting these fields. In general, all of the “O” Usage fields in the CDC IG need to be addressed. “O” is a condition that may only cause confusion between the sending application and the IIS. If you do not intend to support an “O” field, mark it an “X” and change the cardinality to [0..0]. If you plan to support it than it should have a clear Usage (C, CE, R, RE). If you leave it as an “O”, a sending system will expect you to process/store it and that may not be your intentions.
2. The NK1-2 (Name) had two changes
	1. The first change was to restrict the cardinality from [1..\*] to [1..1] meaning this example system accepts one and only one name.
	2. The second change was to the constraint column to reflect the actions of the example system.
3. The NK1-4 (Address) had two changes.
	1. The first was changing the usage from “RE” to “R” meaning that the sending application must provide an address.
	2. The second change was changing the cardinality to both match the new “R” usage change and restrict this from a repeating field to a non-repeating field. [0..\*] to [1..1]
4. The NK1-5 (Phone Number) had three changes
	1. The first was changing the usage from “RE” to “R” meaning the sending application must provide an address.
	2. The second change was changing the cardinality to both match the new “R” usage change and restrict the number of times the field can repeat. [0..\*] to [1..2]
	3. Additional text was added to the Constraint column to reflect accurately the actions of the example system.
5. The NK1-6 (Business Phone Number) had three changes.
	1. The first was changing the usage from “O” to “RE” meaning the sending application should be sending this data if the sending application has relevant data.
	2. The second was changing the cardinality to restrict this field to a maximum of one business phone numbers. [0..\*] to [0..1]
	3. Text was added to the Constraint column define the field.
6. The NK1-20 (Primary Language) had three changes
	1. The first change was to change the usage from “O” to “R” meaning that this field is required.
	2. The second change was required because of the usage change. Since this field is now required, the cardinality had to change from [0..1] to [1..1].
	3. The third change was to add constraint text.
7. Note that NK1-1 and NK1-3 were unchanged, but their values (Cardinality and Usage) were carried across for completeness.

Following the table definition for a given segment are the field definitions for the segment. The NK1 segment field definitions for the example system may take on the following look:

NK1 Field Definitions

NK1-1 Set ID ‑ NK1‑ (SI) 00190

Definition: This field contains the number that identifies this transaction. For the first occurrence of the segment, the sequence number shall be one, for the second occurrence, the sequence number shall be two, etc.

NK1-2 Name (XPN) 00191

Definition: This field contains the name of the next of kin or associated party. The Example System does not support repetition of this field. Any repetition of this field will be ignored and only the first sequence will be used. Refer to [HL7 Table 0200 - Name Type](#HL70200) for valid values.

NK1-3 Relationship (CE) 00192

Definition: This field contains the actual personal relationship that the next of kin/associated party has to the patient. Refer to [User-defined Table 0063 - Relationship](#HL70063) for suggested values.

| The Example System applies the following local business rules to Next of Kin relationships.1. The patient can only have one next of kin record with the relationship of “Self”. The “Self” next of kin must have the same name as the patient or it will be ignored.
2. The patient can only have two next of kin records with the relationship of “Mother” and/or “Father”.
3. To the best of its ability, the example system does not allow duplicate Next of Kin records with different relationships. That is, John Doe cannot be both a “Brother” and an “Other” in the example system for a given patient.
 |
| --- |

NK1-4 Address (XAD) 00193

Definition: This field contains the address of the next of kin/associated party. The Example System does not support repetition for this field. The address sent in the first sequence will be considered the mailing address. Any repetition of this field will be ignored and only the first sequence will be used.

NK1-5 Phone Number (XTN) 00194

Definition: This field contains the telephone number of the next of kin/associated party. Two phone numbers are allowed for the same person. The primary telephone number must be sent in the first sequence. If the primary telephone number is not sent, then the repeat delimiter must be sent in the first sequence. The second sequence will be stored as a “Secondary Phone Number” in the Example System. Refer to HL7 Table 0201 - Telecommunication Use Code and HL7 Table 0202 - Telecommunication Equipment Type for valid values.

NK1-6 Business Phone Number (XTN) 00195

Definition: This field contains the business telephone number of the next of kin/associated party. One phone number is allowed for the same person. The primary business telephone number must be sent in the first sequence. Any repetition of this field will be ignored and only the first sequence will be used. Refer to HL7 Table 0201 - Telecommunication Use Code and HL7 Table 0202 - Telecommunication Equipment Type for valid values.

NK1-20 Primary Language (CE) 00118

Definition: This is the primary language of the next of kin. Refer to HL7 Table – 0296 Primary Language

The changes made to the NK1 field definitions by the Example System are defined below:

1. NK1-1 (Set ID)
	1. This field definition remains unchanged from the CDC IG.
2. NK1-2 (Name)
	1. The verbiage was modified from the CDC IG to support the NK1 definition table dictating that the Example system only accepts the first repetition. If the sending system sends more than 1 name, the example system follows HL7 rules and does not reject the message. The example system reads and accepts the first sequence and merely ignores subsequent sequences.
3. NK1-3 (Relationship)
	1. This field definition remains unchanged from the CDC IG.
	2. However, a local business rule was added in a box to help the sending system understand how next of kin relationships are processed. These are merely for example purposes.
4. NK1-4 (Address)
	1. The verbiage was modified from the CDC IG to support the NK1 definition table dictating that the Example system only accepts the first sequence. If the sending system sends more than 1 address, the example system follows HL7 rules and does not reject the message. The example system reads and accepts the first sequence and merely ignores subsequent sequences.
5. NK1-5 (Phone Number)
	1. The verbiage was modified from the CDC IG to support the NK1 definition table dictating that the Example system only accepts the first and second sequence. If the sending system sends more than 2 phone numbers, the example system follows HL7 rules and does not reject the message. The example system reads and accepts the first and second sequence and merely ignores subsequent sequences.
6. NK1-6 (Business Phone Number)
	1. The verbiage was modified from the CDC IG to support the NK1 definition table dictating that the Example system only accepts the first sequence. If the sending system sends more than 1 business phone number, the example system follows HL7 rules and does not reject the message. The example system reads and accepts the first sequence and merely ignores subsequent sequences.
7. NK1-15 (Administrative Sex)
	1. The CDC IG provided a field definition for NK1-15. This definition is not needed for the Example System since the example system changed Usage to “X” (Not Supported).
8. NK1-16 (Date/Time of Birth)
	1. The CDC IG provided a field definition for NK1-15. This definition is not needed for the Example System since the example system changed Usage to “X” (Not Supported).
9. NK1-20 (Primary Language)
	1. Primary Language was not defined in the CDC IG, but the Example System changed the Usage to “R” (Required) so a field definition is needed.
10. All other NK1 Field Definitions
	1. No other field definitions are needed for the Example System because the Usage for all of the remaining fields is “X” (Not Supported).>

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

Table 5‑1 Message Segments

| **Segment****(Name/Role)** | **Definition** | **Message Usage** | **CDC IG Usage** | ***<SYSTEM NAME>* Usage** | **Note** |
| --- | --- | --- | --- | --- | --- |
| BHS(Batch Header Segment) | The Batch Header Segment wraps a group of 1 or more messages. These may be a mixture of acceptable message types. This segment is not required for real-time messaging. That is, a stream of messages may be sent without a BHS. A system may choose to require BHS for all groups of messages, but should specify this requirement in a local implementation Guide. | Any | Optional |  | Used at the beginning of any batch of messages. |
| BTS(Batch Trailer Segment) | The BTS segment defines the end of a batch. It is required if the message has a matching BHS. | Any | Required if message starts with BHS. |  | Used to mark the end of any batch of messages. If the batch of messages starts with a BHS, then this segment is required. |
| ERR(Error Segment) | The error segment reports information about errors in processing the message. The segment may repeat. Each error will have its’ own ERR segment.  | ACK, RSP | Ability to create and process is required for conformant systems. |  | Used to return information about errors. |
| EVN(Event Segment) | The EVN segment is used to communicate necessary trigger event information to receiving applications. Valid event types for all chapters are contained in HL7 Table 0003 - Event Type | ADT | Required for ADT message. |  | Used to convey event trigger information. |
| FHS(File Header Segment) | The file header segment may be used to group one or more batches of messages. This is a purely optional segment, even if batches are sent. Its’ use is not anticipated for use in real-time transactions. Any system that anticipates its use should specify this in a local implementation Guide. | Any | Optional |  | Used to mark the beginning of a file of batches. |
| FTS(File Trailer Segment) | The FTS segment defines the end of a file of batches. It is only used when the FHS segment is used. | Any | Required to terminate a file of batches. (Matches FHS) |  | Used to mark the end of a file of batches. If a file of batches has an FHS at the beginning, then this segment is required. |
| IN1-3(Insurance Segment) | The IN1-IN3 segments contain insurance policy coverage information necessary to produce properly pro‑rated and patient and insurance bills. | VXU | Optional |  | This segment is not anticipated for use in immunization messages, but may be specified for local use. |
| MSA(Message Acknowledgement Segment) | This segment is included in the query response (RSP) and acknowledgment (ACK) messages. It contains information used to identify the receiver’s acknowledgement response to an identified prior message.  | RSP, ACK | Ability to create and process is required for conformant systems. |  |  |
| MSH(Message Segment Header) | The MSH segment defines the intent, source, destination, and some specifics of the syntax of a message. | All | Ability to create and process is required for conformant systems. |  | This begins every message and includes information about the type of message, how to process it, and by whom it was created. |
| NK1(Next of Kin Segment) | The NK1 segment contains information about the patient’s next of kin or other related parties. Any associated parties may be identified. | VXU, ADT, RSP | Ability to create and process is required for conformant systems. |  | Used to carry information about the next of kin for a client. |
| NTE(Note Segment) | The NTE segment is used for sending notes and comments. It is used in relation to OBX in the VXU and RSP. | VXU, ADT, RSP | Ability to create and process is required for conformant systems. |  | Used to carry a note related to the parent segment. |
| OBX(Observation Result Segment) | The observation result segment has many uses. It carries observations about the object of its parent segment. In the VXU/RSP it is associated with the RXA or immunization record. The basic format is a question and an answer.  | ADT, VXU, RSP | Ability to create and process is required for conformant systems. |  | Used to report one atomic part of an observation. |
| ORC(Order Request Segment) | The Common Order segment (ORC) is used to transmit fields that are common to all orders (all types of services that are requested). While not all immunizations recorded in an immunization message are able to be associated with an order, each RXA must be associated with one ORC, based on HL7 2.5.1 standard.  | VXU, RSP | Ability to create and process is required for conformant systems. |  | Used to give information about a group of one or more orders (typically RXA). |
| PD1(Patient Demographic Segment) | The patient additional demographic segment contains demographic information that is likely to change about the patient. In immunization messages, this is information about the need to protect the client’s information, how they should be part of reminder efforts and their current status in the IIS. | VXU, RSP, ADT | Ability to create and process is required for conformant systems. |  | Used to give information about a patient. A primary use in immunization messages is to give information about privacy and whether contact is allowed. |
| PID(Patient Identifier Segment) | This segment contains permanent patient identifying and demographic information that, for the most part, is not likely to change. Used by all applications as the primary means of communicating patient identification information frequently.  | VXU, ADT, RSP | Ability to create and process is required for conformant systems. |  | Used to carry information about the patient/client. |
| PV1(Patient Visit Segment) | This segment contains information related to a specific visit. | VXU, ADT, RSP | Optional |  | Previously used to carry funding program eligibility status. Use OBX for this purpose now. |
| QAK(Query acknowledgement segment) | The QAK segment contains information sent with responses to a query.  | RSP | Ability to create and process is required for conformant systems. |  |  |
| QPD | Query parameter definition | QBP, RSP | Ability to create and process is required for conformant systems. |  |  |
| RCP | Response control parameter segment | QBP | Ability to create and process is required for conformant systems. |  |  |
| RXA | Pharmacy/Treatment Administration Segment | VXU, RSP | Ability to create and process is required for conformant systems. |  |  |
| RXR | Pharmacy/Treatment Route Segment | VXU, RSP | Ability to create and process is required for conformant systems. |  |  |

## BHS—Batch Header Segment

Table 5‑2 Batch Header Segment (BHS)

| SEQ | LEN | Data Type | CDC IG Cardinality | *<SYSTEM NAME>* Cardinality | Value set | ELEMENT NAME | CDC IG Usage | <SYSTEM NAME> Usage | Constraint |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1 | 1 | ST | [1..1] |  |  | Batch Field Separator | R |  | The BHS.1 field shall be | |
| 2 | 3 | ST | [1..1] |  |  | Batch Encoding Characters | R |  | The BHS.2 field shall be ^~\&  |
| 3 |  | HD | [0..1] |  |  | Batch Sending Application | O |  |  |
| 4 |  | HD | [0..1] |  |  | Batch Sending Facility | O |  |  |
| 5 |  | HD | [0..1] |  |  | Batch Receiving Application | O |  |  |
| 6 |  | HD | [0..1] |  |  | Batch Receiving Facility | O |  |  |
| 7 |  | TS | [0..1] |  |  | Batch Creation Date/Time | O |  |  |
| 8 | 40 | ST | [0..1] |  |  | Batch Security | O |  |  |
| 9 | 20 | ST | [0..1] |  |  | Batch Name/ID/Type | O |  |  |
| 10 | 80 | ST | [0..1] |  |  | Batch Comment | O |  |  |
| 11 | 20 | ST | [0..1] |  |  | Batch Control ID | O |  |  |
| 12 | 20 | ST | [0..1] |  |  | Reference Batch Control ID | O |  |  |

### BHS Field Definitions

#### BHS-1 Batch Field Separator (ST) 00081

***Definition:*** This field contains the separator between the segment ID and the first real field, BHS-2-batch encoding characters. As such it serves as the separator and defines the character to be used as a separator for the rest of the message. The required value is |,(ASCII 124). Note that this field is different from other fields and immediately follows the Segment name code.

BHS|

 ⇑

Separator

#### BHS-2 Batch Encoding Characters (ST) 00082

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

## BTS—Batch Trailer Segment

Table 5‑3 Batch Trailer Segment (BTS)

| SEQ | LEN | Data Type | CDC IG Cardinality | *<SYSTEM NAME>* Cardinality | Value Set | ELEMENT NAME | CDC IG Usage | *<SYSTEM NAME>* Usage | Constraint |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1 | 10 | ST | [0..1] |  |  | Batch Message Count | O |  |  |
| 2 | 80 | ST | [0..1] |  |  | Batch Comment | O |  |  |
| 3 | 100 | NM | [0..1] |  |  | Batch Totals | O |  |  |

## ERR—Error Segment

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

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

Table 5‑4 Error Segment (ERR)

| SEQ | LEN | Data Type | CDC IG Cardinality | *<System Name>* Cardinality | Value Set | ELEMENT NAME | CDC IG Usage | *<System Name>* Usage | Constraint |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1 |  | ELD | [0..0] |  |  | Error Code and Location | X |  | Not supported for Version 2.5 and above. |
| 2 | 18 | ERL | [0..1][[1]](#footnote-1) |  |  | Error Location | RE |  | If an error involves the entire message (e.g. the message is not parse-able.) then location has no meaning. In this case, the field is left empty. |
| 3 |  | CWE | [1..1] |  | 0357 | HL7 Error Code | R |  |  |
| 4 | 2 | ID | [1..1] |  | 0516 | Severity | R |  |  |
| 5 |  | CWE | [0..1] |  | 0533 | Application Error Code | O |  |  |
| 6 | 80 | ST | [0..1] |  |  | Application Error Parameter | O |  |  |
| 7 | 2048 | TX | [0..1] |  |  | Diagnostic Information | O |  |  |
| 8 | 250 | TX | [0..1] |  |  | User Message | O |  | This field may contain free text that may be displayed to a user. It is not intended for any further processing. |
| 9 | 20 | IS | [0..1] |  | 0517 | Inform Person Indicator | O |  |  |
| 10 |  | CWE | [0..1] |  | 0518 | Override Type | O |  |  |
| 11 |  | CWE | [0..1] |  | 0519 | Override Reason Code | O |  |  |
| 12 |  | XTN | [0..1] |  |  | Help Desk Contact Point | O |  |  |

### ERR field definitions:

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

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

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

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

***Definition:*** Identifies the HL7 (communications) error code. Refer to [HL7 Table 0357 – Message Error Condition Codes](#HL70357) for valid values.

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

***Definition:*** Identifies the severity of an application error. Knowing if something is Error, Warning or Information is intrinsic to how an application handles the content. Refer to [HL7 Table 0516 - Error severity](#HL70516) for valid values. If ERR-3 has a value of "0", ERR-4 will have a value of "I".

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

***Definition:*** Application specific code identifying the specific error that occurred. Refer to [User-Defined Table 0533 – Application Error Code](#HL70533) for suggested values.

If the message associated with the code has parameters, it is recommended that the message be indicated in the format of the java .text.MessageFormat approach[[2]](#footnote-2). This style provides information on the parameter type to allow numbers, dates and times to be formatted appropriately for the language.

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

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

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

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

Example with error in PID:

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

## EVN ‑ Event Type Segment

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Table 5‑5 Event Segment (EVN)

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

### EVN field definitions

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

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

## FHS—File Header Segment

Table 5‑6 File Header Segment (FHS)

| SEQ | LEN | Data Type | CDC IG Cardinality | *<System Name>* Cardinality | Value Set | ELEMENT NAME | CDC IG Usage | *<System Name>* Usage | Comment |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1 | 1 | ST | [1..1] |  |  | File Field Separator | R |  | The FHS.1 field shall be | |
| 2 | 4 | ST | [1..1] |  |  | File Encoding Characters | R |  | The FHS.2 field shall be ^~\&  |
| 3 |  | HD | [0..1] |  |  | File Sending Application | O |  |  |
| 4 |  | HD | [0..1] |  |  | File Sending Facility | O |  |  |
| 5 |  | HD | [0..1] |  |  | File Receiving Application | O |  |  |
| 6 |  | HD | [0..1] |  |  | File Receiving Facility | O |  |  |
| 7 |  | TS | [0..1] |  |  | File Creation Date/Time | O |  |  |
| 8 | 40 | ST | [0..1] |  |  | File Security | O |  |  |
| 9 | 20 | ST | [0..1] |  |  | File Name/ID | O |  |  |
| 10 | 80 | ST | [0..1] |  |  | File Header Comment | O |  |  |
| 11 | 20 | ST | [0..1] |  |  | File Control ID | O |  |  |
| 12 | 20 | ST | [0..1] |  |  | Reference File Control ID | O |  |  |

### FHS Field Definitions

#### FHS-1 File Field Separator (ST) 00067

***Definition:*** This field has the same definition as the corresponding field in the MSH segment. The value shall be |.

Note that this field is different from other fields and follows the segment name code immediately.

FHS|

#### FHS-2 File Encoding Characters (ST) 00068

***Definition:*** This field has the same definition as the corresponding field in the MSH segment. The value shall be ^~\&

## FTS—File Trailer Segment

Table 5‑7 File Trailer Segment (FTS)

| SEQ | LEN | Data Type | CDC IG Cardinality | *<System Name>* Cardinality | Value set | ELEMENT NAME | CDC IG Usage | *<System Name>* Usage | Comment |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1 | 10 | NM | [0..1] |  |  | File Batch Count | O |  |  |
| 2 | 80 | ST | [0..1] |  |  | File Trailer Comment | O |  |  |

## IN1—Insurance Segment (IN2, IN3)

Note: The IN1, IN2, and IN3 segments were not defined in the CDC IG. If you have plans to support Insurance Segments, these must be defined. If you do not support Insurance Segments, then the first table in this chapter should state lack of support and this can be removed.

## MSA—Message Acknowledgement Segment

Table 5‑8 Message Acknowledgement Segment (MSA)

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

### MSA Field Definitions

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

***Definition:***This field contains an acknowledgment code. See message processing rules. Refer to [HL7 Table 0008 - Acknowledgment code](#HL70008) for valid values.

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

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

## MSH—Message Header Segment

HL7 Attribute Table - MSH - Message Header

Table 5‑9 Message Header Segment (MSH)

| SEQ | LEN | Data Type | CDC IG Cardinality | *<System Name>* Cardinality | Value set | ELEMENT NAME | CDC IG Usage | *<System Name>* Usage | Constraint |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1 | 1 | ST | [1..1] |  |  | Field Separator | R |  | The MSH.1 field shall be | |
| 2 | 4 | ST | [1..1] |  |  | Encoding Characters | R |  | The MSH.2 field shall be ^~\&  |
| 3 |  | HD | [0..1] |  | [0361](#HL70361) | Sending Application | RE |  | No constraint |
| 4 |  | HD | [0..1] |  | [0362](#HL70362) | Sending Facility | RE |  | No constraint |
| 5 |  | HD | [0..1] |  | [0361](#HL70361) | Receiving Application | RE |  | No constraint |
| 6 |  | HD | [0..1] |  | [0362](#HL70362) | Receiving Facility | RE |  | No constraint |
| 7 |  | TS | [1..1] |  |  | Date/Time Of Message | R |  | The degree of precision must be at least to the minute, and the time zone must be included (formatYYYYMMDDHHMM[SS[.S[S[S[S]]]]]+/-ZZZZ). |
| 8 | 40 | ST | [0..1] |  |  | Security | O |  |  |
| 9 | 15 | MSG | [1..1] |  |  | Message Type | R |  |  |
| 10 | 20 | ST | [1..1] |  |  | Message Control ID | R |  |  |
| 11 | 3 | PT | [1..1] |  |  | Processing ID | R |  |  |
| 12 |  | VID | [1..1] |  |  | Version ID | R |  | 2.1, 2.2, 2.3,2.3.1, 2.4,2.5.1 |
| 13 | 15 | NM | [0..1] |  |  | Sequence Number | O |  |  |
| 14 | 180 | ST | [0..1] |  |  | Continuation Pointer | O |  |  |
| 15 | 2 | ID | [0..1] |  | [0155](#HL70155) | Accept Acknowledgement Type | RE |  |  |
| 16 | 2 | ID | [0..1] |  | [0155](#HL70155) | Application Acknowledgment Type | RE |  | AL-always, NE-Never, ER-Error/reject only, SU successful completion only |
| 17 | 3 | ID | [0..1] |  | [0399](#HL70399) | Country Code | O |  | Use 3 character country code from ISO 3166. If is empty, assume USA |
| 18 | 16 | ID | [0..1] |  | [0211](#HL70211) | Character Set | O |  | blank defaults to ASCII printable |
| 19 |  | CE | [0..1] |  |  | Principal Language Of Message | O |  | blank |
| 20 | 20 | ID | [0..1] |  | [0356](#HL70356) | Alternate Character Set Handling Scheme | O |  | blank |
| 21 |  | EI  | [0..\*] |  |  | Message Profile Identifier | O |  | This field will be required for use whenever a Profile is being used. |

### MSH Field Definitions

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

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

Example:

MSH|

 🡹

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

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

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

***Definition:***This field uniquely identifies the sending application. In the case of an IIS, it will be found in the list of IIS applications in Appendix A, User-defined table 0300. This is not the product, but rather the name of the specific instance. For instance, the IIS in Georgia(GRITS) is an instance based on the Wisconsin IIS (WIR). The code for GRITS would be specific to GRITS. Additional locally defined codes may be added to accommodate local needs. The first component shall be the name space id found in User-defined Table 0300, including local additions to this table. The second and third components are reserved for use of OIDs.

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

***Definition:***This field identifies the organization responsible for the operations of the sending application. Locally defined codes may be added to accommodate local needs. The first component shall be the name space id found in User-defined Table 0300. The second and third components are reserved for use of OIDs or other universal identifiers.

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

***Definition:***This field uniquely identifies the receiving application. In the case of an IIS, it will be found in the list of IIS applications in Appendix A, User-defined table 0300. This is not the product, but rather the name of the specific instance. For instance, the IIS in Georgia(GRITS) is an instance based on the Wisconsin IIS (WIR). The code for GRITS would be specific to GRITS. Additional locally defined codes may be added to accommodate local needs. The first component shall be the name space id found in User-defined Table 0300. The second and third components are reserved for use of OIDs.

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

***Definition:*** This field identifies the organization responsible for the operations of the receiving application. Locally defined codes may be added to accommodate local needs. The first component shall be the name space id found in User-defined Table 0300. The second and third components are reserved for use of OIDs.

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

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

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

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

***Definition:***This field contains the message type, trigger event, and the message structure ID for the message. Refer to [HL7 Table 0076 - Message type](#HL70076) for valid values for the message type code. This table contains values such as ACK, ADT, VXU, ORU etc. The following table lists those anticipated to be used by IIS.

Table 5‑10 Message Types

|  |  |
| --- | --- |
| **Transaction** | **Message type** |
| Unsolicited update of immunization record | VXU |
| Unsolicited update of demographic data | ADT |
| Query to another system  | QBP |
| Response to query  | RSP |

Refer to [HL7 Table 0003 - Event type](#HL70003) for valid values for the trigger event. This table contains values like A01, O01, R01 etc.

Message structure component is required.

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

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

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

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

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

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

Messages conforming to the specifications in this Guide shall indicate that the version is 2.5.1. Messages indicating an earlier version shall follow the specifications in the 2.3.1 Guide.

#### MSH-15 Accept Acknowledgment Type (ID) 00015

***Definition:*** 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 Table 0155 - Accept/application acknowledgment conditions](#HL70155) for valid values.

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

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

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

Required for enhanced acknowledgment mode.

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

#### MSH-17 Country Code (ID) 00017

***Definition:***This field contains the country of origin for the message. The values to be used are those of ISO 3166,.[[3]](#footnote-3). The ISO 3166 table has three separate forms of the country code: HL7 specifies that the 3-character (alphabetic) form be used for the country code. If this field is not valued, then assume that the code is USA.

Refer to [HL7 Table 0399 – Country code](#HL70399) for the 3-character codes as defined by ISO 3166-1.

#### MSH-21 Message Profile Identifier (EI) 01598

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

This field will be required whenever a profile is being used to constrain the message.

## NK1—Next of Kin Segment

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

Table 5‑11-Next of Kin Segment (NK1)

| SEQ | LEN | Data Type | CDC IG Cardinality | *<System Name>* Cardinality | Value set | ELEMENT NAME | CDC IG Usage | *<System Name>* Usage | Constraint |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1 | 4 | SI | [1..1] |  |  | Set ID - NK1 | R |  |  |
| 2 |  | XPN | [1..\*] |  |  | Name | R |  | The first instance is the legal name and is required. |
| 3 |  | CE | [1..1] |  | 0063 | Relationship | R |  |  |
| 4 |  | XAD | [0..\*] |  |  | Address | RE |  | The first instance shall be the primary address. |
| 5 |  | XTN | [0..\*] |  |  | Phone Number | RE |  | The first instance shall be the primary phone number. |
| 6 |  | XTN | [0..\*] |  |  | Business Phone Number | O |  |  |
| 7 |  | CE | [0..1] |  | 0131 | Contact Role | O |  |  |
| 8 | 8 | DT | [0..1] |  |  | Start Date | O |  |  |
| 9 | 8 | DT | [0..1] |  |  | End Date | O |  |  |
| 10 | 60 | ST | [0..1] |  |  | Next of Kin / Associated Parties Job Title | O |  |  |
| 11 |  | JCC | [0..1] |  | 0327/0328 | Next of Kin / Associated Parties Job Code/Class | O |  |  |
| 12 |  | CX | [0..1] |  |  | Next of Kin / Associated Parties Employee Number | O |  |  |
| 13 |  | XON | [0..1] |  |  | Organization Name - NK1 | O |  |  |
| 14 |  | CE | [0..1] |  | 0002 | Marital Status | O |  |  |
| 15 | 1 | IS | [0..1] |  | 0001 | Administrative Sex | O |  |  |
| 16 |  | TS | [0..1] |  |  | Date/Time of Birth | O |  |  |
| 17 | 2 | IS | [0..1] |  | 0223 | Living Dependency | O |  |  |
| 18 | 2 | IS | [0..1] |  | 0009 | Ambulatory Status | O |  |  |
| 19 |  | CE | [0..1] |  | 0171 | Citizenship | O |  |  |
| 20 |  | CE | [0..1] |  | ISO0639 | Primary Language | O |  |  |
| 21 | 2 | IS | [0..1] |  | 0220 | Living Arrangement | O |  |  |
| 22 |  | CE | [0..1] |  | 0215 | Publicity Code | O |  |  |
| 23 | 1 | ID | [0..1] |  | 0136 | Protection Indicator | O |  |  |
| 24 | 2 | IS | [0..1] |  | 0231 | Student Indicator | O |  |  |
| 25 |  | CE | [0..1] |  | 0006 | Religion | O |  |  |
| 26 |  | XPN | [0..1] |  |  | Mother’s Maiden Name | O |  |  |
| 27 |  | CE | [0..1] |  | 0212 | Nationality | O |  |  |
| 28 |  | CE | [0..1] |  | 0189 | Ethnic Group | O |  |  |
| 29 |  | CE | [0..1] |  | 0222 | Contact Reason | O |  |  |
| 30 |  | XPN | [0..1] |  |  | Contact Person’s Name | O |  |  |
| 31 |  | XTN | [0..1] |  |  | Contact Person’s Telephone Number | O |  |  |
| 32 |  | XAD | [0..1] |  |  | Contact Person’s Address | O |  |  |
| 33 |  | CX | [0..1] |  |  | Next of Kin/Associated Party’s Identifiers | O |  |  |
| 34 | 2 | IS | [0..1] |  | 0311 | Job Status | O |  |  |
| 35 |  | CE | [0..1] |  | 0005 | Race | O |  |  |
| 36 | 2 | IS | [0..1] |  | 0295 | Handicap | O |  |  |
| 37 | 16 | ST | [0..1] |  |  | Contact Person Social Security Number | O |  |  |
| 38 |  | ST | [0..1] |  |  | Next of Kin Birth Place | O |  |  |
| 39 | 2 | IS | [0..1] |  | 0099 | VIP Indicator | O |  |  |

### NK1 Field Definitions

#### NK1-1 Set ID ‑ NK1‑ (SI) 00190

***Definition:*** This field contains the number that identifies this transaction. For the first occurrence of the segment, the sequence number shall be one, for the second occurrence, the sequence number shall be two, etc.

#### NK1-2 Name (XPN) 00191

***Definition:***This field contains the name of the next of kin or associated party. Multiple names for the same person are allowed, but the legal name must be sent in the first sequence. Refer to [HL7 Table 0200 - Name Type](#HL70200) for valid values.

#### NK1-3 Relationship (CE) 00192

***Definition:***This field contains the actual personal relationship that the next of kin/associated party has to the patient. Refer to [User-defined Table 0063 - Relationship](#HL70063) for suggested values.

#### NK1-4 Address (XAD) 00193

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

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

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

#### NK1-6 Business Phone Number (XTN) 00195

***Definition:***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 sequence. If the primary telephone number is not sent, then the repeat delimiter must be sent in the first sequence. Refer to HL7 Table 0201 - Telecommunication Use Code and HL7 Table 0202 - Telecommunication Equipment Type for valid values.

#### NK1-15 Administrative Sex (IS) 00111

***Definition:***This is the sex of the next of kin.

#### NK1-16 Date/Time of Birth (TS) 00110

***Definition:***This is the data of birth of the next of kin.

## NTE—Note Segment

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

Table 5‑12 Note Segment (NTE)

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

### NTE Field Definitions

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

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

## OBX—Observation Result Segment

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

Table 5‑13 Observation Segment (OBX)

| SEQ | LEN | Data Type | CDC IG Cardinality | *<System Name>* Cardinality | Value Sets | ELEMENT NAME | CDC IG Usage | *<System Name>* Usage | Comment |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1 | 4 | SI | [1..1] |  |  | Set ID – OBX | R |  |  |
| 2 | 2 | ID | [1..1] |  | 0125 | Value Type | R |  | CE, NM, ST, DT, or TS |
| 3 |  | CE | [1..1] |  |  | Observation Identifier | R |  | This indicates what this observation refers to. It poses the question that is answered by OBX-5. |
| 4 | 20 | ST | [1..1] |  |  | Observation Sub-ID | RE |  |  |
| 5 |  | varies[[4]](#footnote-4) | [1..1] |  |  | Observation Value | R |  | This is the observation value and answers the question posed by OBX-3 |
| 6 |  | CE | [0..1] |  |  | Units | CE |  | If the observation in OBX-5 requires an indication of the units, they are placed here. |
| 7 |  60 | ST | [0..1] |  |  | References Range | O |  |  |
| 8 | 5 | IS | [0..1] |  | 0078 | Abnormal Flags | O |  |  |
| 9 | 5 | NM | [0..1] |  |  | Probability | O |  |  |
| 10 | 2 | ID | [0..1] |  | 0080 | Nature of Abnormal Test | O |  |  |
| 11 | 1 | ID | [1..1] |  | 0085 | Observation Result Status | R |  | Constrain to F |
| 12 |  | TS | [0..1] |  |  | Effective Date of Reference Range Values | O |  |  |
| 13 | 20 | ST | [0..1] |  |  | User Defined Access Checks | O |  |  |
| 14 |  | TS | [1..1] |  |  | Date/Time of the Observation | R |  |  |
| 15 |  | CE | [0..1] |  |  | Producer's Reference | O |  |  |
| 16 |  | XCN | [0..1] |  |  | Responsible Observer | O |  |  |
| 17 |  | CE | [0..1] |  |  | Observation Method | O |  |  |
| 18 |  | EI | [0..1] |  |  | Equipment Instance Identifier | O |  |  |
| 19 |  | TS | [0..1] |  |  | Date/Time of the Analysis | O |  |  |
| 20 |  |  | [0..1] |  |  | Reserved for harmonization with V2.6 | O |  |  |
| 21 |  |  | [0..1] |  |  | Reserved for harmonization with V2.6 | O |  |  |
| 22 |  |  | [0..1] |  |  | Reserved for harmonization with V2.6 | O |  |  |
| 23 |  | XON | [0..1] |  |  | Performing Organization Name | O |  |  |
| 24 |  | XAD | [0..1] |  |  | Performing Organization Address | O |  |  |
| 25 |  | XCN | [0..1] |  |  | Performing Organization Medical Director | O |  |  |

### OBX Field Definitions

#### OBX-1 Set ID ‑ OBX‑ (SI) 00569

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

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

***Definition:***This field contains the format of the observation value in OBX. If the value is CE then the result must be a coded entry.

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

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

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

The 2.3.1 Implementation Guide used suffixes on the first sequence in OBX-3 to group related observations. For instance, reporting a VIS publication date and VIS receipt date each added a suffix of one LOINC code to a second LOINC code when recording VIS dates for a component vaccine. (38890-0&29768-9^DATE VACCINE INFORMATION STATEMENT PUBLISHED^LN) This is no longer acceptable. Grouping of related observations will be accomplished using Observation sub-id (OBX-4).

#### OBX-4 Observation Sub‑ID‑ (ST) 00572

***Definition:***This field is used to group related observations by setting the value to the same number. For example, recording VIS date and VIS receipt date for a combination vaccination requires 6 OBX segments. One OBX would indicate the vaccine group. It would have a pair of OBX indicating the VIS publication date and the VIS receipt date. These would have the same OBX-4 value to allow them to be linked. The second set of three would have another OBX-4 value common to each of them.

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

For example:

OBX|1|LN|^observation 1 part 1^^^^^|1|…

OBX|2|LN|^ observation 1 part 2^^^^^|1|…

OBX|3|DT|^a different observation^^^^^|2|…

Example:

**OBX**|1|CE|38890-0^COMPONENT VACCINE TYPE^LN|1|45^HEP B, NOS^CVX||||||F|<CR>

**OBX**|2|TS|29768-9^DATE VACCINE INFORMATION STATEMENT PUBLISHED^LN|1|20010711||||||F|<CR>

**OBX**|3|TS|29769-7^DATE VACCINE INFORMATION STATEMENT PRESENTED^LN|1|19901207||||||F|<CR>

**OBX**|4|CE|38890-0^COMPONENT VACCINE TYPE^LN|2|17^HIB,NOS^CVX||||||F|<CR>

**OBX**|5|TS|29768-9^DATE VACCINE INFORMATION STATEMENT PUBLISHED^LN|2|19981216||||||F|<CR>

**OBX**|6|TS|29769-7^DATE VACCINE INFORMATION STATEMENT PRESENTED^LN|2|19901207||||||F|<CR>

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

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

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

Coded values

When an OBX segment contains values of CE data types, the observations are stored as a combination of codes and/or text.

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

***Definition:***This shall be the units for the value in OBX-5. The value shall be from the ISO+ list of units.

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

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

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

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

## ORC—Order Request Segment

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

Table 5‑14 Common Order Segment (ORC)

| SEQ | LEN | Data Type | CDC IG Cardinality | *<System Name>* Cardinality | Value Set | ELEMENT NAME | CDC IG Usage | *<System Name>* Usage | Comment |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1 | 2 | ID | [1..1] |  | 0119 | Order Control | R |  | use RE  |
| 2 |  | EI | [0..1] |  |  | Placer Order Number | RE |  | See Guidance below. |
| 3 |  | EI | [1..1] |  |  | Filler Order Number | R |  | See Guidance below. |
| 4 |  | EI | [0..1] |  |  | Placer Group Number | O |  |  |
| 5 | 2 | ID | [0..1] |  | 0038 | Order Status | O |  |  |
| 6 | 1 | ID | [0..1] |  | 0121 | Response Flag | O |  |  |
| 7 |  | TQ | [0..0] |  |  | Quantity/Timing | X |  |  |
| 8 |  | EIP | [0..1] |  |  | Parent | O |  |  |
| 9 |  | TS | [0..1] |  |  | Date/Time of Transaction | O |  |  |
| 10 |  | XCN | [0..1] |  |  | Entered By | RE |  | This is the person that entered this immunization record into the system. |
| 11 |  | XCN | [0..1] |  |  | Verified By | O |  |  |
| 12 |  | XCN | [0..1] |  |  | Ordering Provider | RE |  | This shall be the provider ordering the immunization. It is expected to be empty if the immunization record is transcribed from a historical record. |
| 13 |  | PL | [0..1] |  |  | Enterer's Location | O |  |  |
| 14 |  | XTN | [0..1] |  |  | Call Back Phone Number | O |  |  |
| 15 |  | TS | [0..1] |  |  | Order Effective Date/Time | O |  |  |
| 16 |  | CE | [0..1] |  |  | Order Control Code Reason | O |  |  |
| 17 |  | CE | [0..1] |  |  | Entering Organization | O |  | This is the provider organization that entered this record/order. |
| 18 |  | CE | [0..1] |  |  | Entering Device | O |  |  |
| 19 |  | XCN | [0..1] |  |  | Action By | O |  |  |
| 20 |  | CE | [0..1] |  | 0339 | Advanced Beneficiary Notice Code | O |  |  |
| 21 |  | XON | [0..1] |  |  | Ordering Facility Name | O |  |  |
| 22 |  | XAD | [0..1] |  |  | Ordering Facility Address | O |  |  |
| 23 |  | XTN | [0..1] |  |  | Ordering Facility Phone Number | O |  |  |
| 24 |  | XAD | [0..1] |  |  | Ordering Provider Address | O |  |  |
| 25 |  | CWE | [0..1] |  |  | Order Status Modifier | O |  |  |
| 26 |  | CWE | [0..1] |  | 0552 | Advanced Beneficiary Notice Override Reason | O |  |  |
| 27 |  | TS | [0..1] |  |  | Filler's Expected Availability Date/Time | O |  |  |
| 28 |  | CWE | [0..1] |  | 0177 | Confidentiality Code | O |  |  |
| 29 |  | CWE | [0..1] |  | 0482 | Order Type | O |  |  |
| 30 |  | CNE | [0..1] |  | 0483 | Enterer Authorization Mode | O |  |  |
| 31 |  | CWE | [0..1] |  |  | Parent Universal Service Identifier | O |  |  |

### ORC Field Definitions

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

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

The value for VXU and RSP shall be RE.

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

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

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

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

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

ORC-2 is a system identifier assigned by the placer software application. The Placer Order Number and the Filler Order Number are essentially foreign keys exchanged between applications for uniquely identifying orders and the associated results across applications.

In the case where the ordering provider organization is not known, the sending system may leave this field empty.

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

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

This shall be the unique identifier of the sending system in a given transaction. In the case where system A sends the record to system B and system B then forwards to system C, system B will send its’ own unique identifier.

Use of this foreign key will allow the initiating system to identify accurately the previously sent immunization record, facilitating update or deletion of that record.

In the case where a historic immunization is being recorded (i.e. from an immunization card), the sending system SHALL assign an identifier as if it were an immunization administered by a provider associated with the provider organization owning the sending system.

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

Note that the receiving system will need to store this value in addition to its own internal id in order for this to be used.

#### ORC-10 Entered By (XCN) 00224

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

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

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

#### ORC-17 Entering Organization (CE) 00231

***Definition:***This field identifies the organization that the enterer belonged to at the time he/she enters/maintains the order, such as medical group or department. The person who entered the request is defined in ORC-10 -entered by.

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

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

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

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

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

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

#### ORC-24 Ordering Provider Address (XAD) 01314

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

#### ORC –28 Confidentiality Code (CWE) 00615

***Definition:*** This field allows a system to indicate if special privacy rules apply to the RXA that is associated with this ORC. For instance, if a state had special rules about who may see records for HPV vaccinations, then this field could convey that. The recommended value to use in this case is R for restricted.

If this field is populated, it indicates the active choice of the patient or responsible person. In other words, if the value indicates that the information must be protected, the person has stated that it must be protected. An empty field indicates that the client has not actively specified the way they want this data to be handled.

Local implementation guides should describe the local usage of this field and value.

## PD1—Patient Demographic Segment

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

Table ‑-Patient Demographic Segment (PD1)

| SEQ | LEN | Data Type | **CDC IG Cardinality** | *<System Name>* Cardinality | Value Set | ELEMENT NAME | CDC IG Usage | *<System Name>* Usage | Comment |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1 | 2 | IS | [0..1] |  | 0223 | Living Dependency | O |  |  |
| 2 | 2 | IS | [0..1]  |  | 0220 | Living Arrangement | O |  |  |
| 3 | 250 | XON | [0..1] |  |   | Patient Primary Facility | O |  |  |
| 4 | 250 | XCN | [0..1] |  |   | Patient Primary Care Provider Name & ID No. | O |  |  |
| 5 | 2 | IS | [0..1]  |  | 0231 | Student Indicator | O |  |  |
| 6 | 2 | IS | [0..1]  |  | 0295 | Handicap | O |  |  |
| 7 | 2 | IS | [0..1]  |  | 0315 | Living Will Code | O |  |  |
| 8 | 2 | IS | [0..1]  |  | 0316 | Organ Donor Code | O |  |  |
| 9 | 1 | ID | [0..1]  |  | 0136 | Separate Bill | O |  |  |
| 10 | 250 | CX | [0..1] |  |   | Duplicate Patient | O |  |  |
| 11 | 250 | CE |  [0..1] |  | 0215 | Publicity Code | RE |  |  |
| 12 | 1 | ID |  [0..1] |  | 0136 | Protection Indicator | RE |  |  |
| 13 | 8 | DT | [0..1]  |  |   | Protection Indicator Effective Date | CE |  | If protection indicator is valued, then this field should be valued. |
| 14 | 250 | XON | [0..1] |  |   | Place of Worship | O |  |  |
| 15 | 250 | CE | [0..1] |  | 0435 | Advance Directive Code | O |  |  |
| 16 | 1 | IS | [0..1]  |  | 0441 | Immunization Registry Status | RE |  |  |
| 17 | 8 | DT | [0..1]  |  |   | Immunization Registry Status Effective Date | CE |  | If the registry status field is filled, then this should be valued. |
| 18 | 8 | DT | [0..1]  |  |   | Publicity Code Effective Date | CE |  | If the publicity code field is filled then this field should be valued. |
| 19 | 5 | IS | [0..1]  |  | 0140 | Military Branch | O |  |  |
| 20 | 2 | IS | [0..1]  |  | 0141 | Military Rank/Grade | O |  |  |
| 21 | 3 | IS  |  [0..1] |  | 0142 | Military Status | O |  |  |

### PD1 Field Definitions

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

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

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

***Definition:***Identifier for primary care provider. Use may be specified locally.

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

***Definition:***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 User-defined Table 0215 - Publicity Code for suggested values.

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

***Definition:***This field identifies whether a person’s information may be shared with others[[5]](#footnote-5). Specific protection policies are a local consideration (opt in or opt out, for instance). This field conveys the current state in the sending system.

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

There are 3 states:

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

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

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

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

**Note on Null and Empty in HL7**

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

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

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

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

***Definition:***This field identifies the current status of the patient in relation to the sending provider organization.. Refer to User-defined Table 0441 - Immunization Registry Status for suggested values.

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

#### PD1-17 Immunization Registry Status Effective Date (DT) 01570

***Definition:***This field indicates the effective date for the registry status reported in PD1-16 - Immunization Registry Status.

#### PD1-18 Publicity Code Effective Date (DT) 01571

***Definition:***This is the effective date for PD1-11 - Publicity Code.

## PID—Patient Identifier Segment

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

Table ‑-Patient Identifier Segment (PID)

| SEQ | LEN | Data Type | CDC IG Cardinality | *<System Name>* Cardinality | Value Set | ELEMENT NAME | CDC IG Usage | *<System Name>* Usage | Constraint |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1 | 4 | SI | [0..1] |  |   | Set ID - PID | RE |  |  |
| 2 |  | CX | [0..0] |  |   | Patient ID | X |  |  |
| 3 |  | CX | [1..\*] |  |   | Patient Identifier List | R |  |  |
| 4 |  | CX | [0..0] |  |   | Alternate Patient ID - 00106 | X |  |  |
| 5 |  | XPN | [1..\*] |  |   | Patient Name | R |  | the first repetition shall contain the legal name. Multiple given names or initials are separated by spaces. |
| 6 |  | XPN | [0..1] |  |   | Mother’s Maiden Name | RE |  |  |
| 7 |  | TS | [1..1] |  |   | Date/Time of Birth | R |  | Required, must have month, day and year. |
| 8 | 1 | IS | [0..1] |  | 0001 | Administrative Sex | RE |  | M= male, F = female, U = not determined/unspecified/unknown. |
| 9 |  | XPN | [0..0] |  |   | Patient Alias | X |  | This field should not be used. It was supported in earlier implementations. |
| 10 |  | CE | [0..\*] |  | 0005 | Race | RE |  | The first triplet is to be used for the alpha code. The second triplet of the CE data type for race (alternate identifier, alternate text, and name of alternate coding system) should be used for governmentally assigned numeric codes (####-#). |
| 11 |  | XAD | [0..\*] |  |   | Patient Address | RE |  |  The first repetition should be the primary address. |
| 12 | 4 | IS | [0..0] |  | 0289 | County Code | X |  | County belongs in address field. |
| 13 |  | XTN | [0..\*] |  |   | Phone Number - Home | RE |  |  The first instance shall be the primary phone number.Only one item is allowed per repetition. |
| 14 |  | XTN | [0..\*] |  |   | Phone Number - Business | O |  |   |
| 15 |  | CE | [0..1] |  | ISO0639 | Primary Language | O |  | Use ISO 639. |
| 16 |  | CE | [0..1] |  | 0002 | Marital Status | O |  |  |
| 17 |  | CE | [0..1] |  | 0006 | Religion | O |  |  |
| 18 |  | CX | [0..1] |  |   | Patient Account Number | O |  |  |
| 19 | 16 | ST | [0..0] |  |   | SSN Number - Patient | X |  |  |
| 20 |  | DLN | [0..0] |  |   | Driver's License Number - Patient | X |  |  |
| 21 |  | CX | [0..0] |  |   | Mother's Identifier | X |  |  |
| 22 |  | CE | [0..1] |  | 0189 | Ethnic Group | RE |  | First triplet shall contain H,N,U if populated. Second triplet shall contain government issued code from table xxx, if populated. If both are populated, they must match logically. |
| 23 | 60 | ST | [0..1] |  |   | Birth Place | O |  | Use may be specified locally. |
| 24 | 1 | ID | [0..1] |  | 0136 | Multiple Birth Indicator | RE |  | The acceptable values are Y and N. If the status is undetermined, then field shall be empty. |
| 25 | 2 | NM | [0..1] |  |   | Birth Order | CE |  | If Multiple Birth Indicator is populated with Y, then this field should contain the number indicating the person’s birth order, with 1 for the first child born and 2 for the second. |
| 26 |  | CE | [0..1] |  | 0171 | Citizenship | O |  |  |
| 27 |  | CE | [0..1] |  | 0172 | Veterans Military Status | O |  |  |
| 28 |  | CE | [0..1] |  | 0212 | Nationality  | O |  |  |
| 29 |  | TS | [0..1] |  |   | Patient Death Date and Time | RE |  |   |
| 30 | 1 | ID | [0..1] |  | 0136 | Patient Death Indicator | CE |  |  If patient death date is populated, then this field should be populated. |
| 31 | 1 | ID | [0..1] |  | 0136 | Identity Unknown Indicator | O |  |  |
| 32 | 20 | IS | [0..1] |  | 0445 | Identity Reliability Code | O |  |  |
| 33 |  | TS | [0..1] |  |   | Last Update Date/Time | O |  | May be locally specified. |
| 34 |  | HD | [0..1] |  |   | Last Update Facility | O |  | Use is locally specified. |
| 35 |  | CE | [0..1] |  | 0446 | Species Code | O |  |  |
| 36 |  | CE | [0..1] |  | 0447 | Breed Code | O |  |  |
| 37 | 80 | ST | [0..1] |  |   | Strain | O |  |  |
| 38 |  | CE | [0..1] |  | 0429 | Production Class Code | O |  |  |
| 39 |  | CWE | [0..1] |  | 0171 | Tribal Citizenship | O |  |  |

### PID Field Definitions

#### PID-1 Set ID ‑ PID‑ (SI) 00104

***Definition:***This field contains the number that identifies this transaction. For the first occurrence of the segment, the sequence number shall be one, for the second occurrence, the sequence number shall be two, etc.

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

***Definition:***This field contains the list of identifiers (one or more) used by the healthcare facility to uniquely identify a patient (e.g., medical record number, billing number, birth registry, national unique individual identifier, etc.).

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

***Definition:***This field contains the names of the patient, The primary or legal name of the patient is reported first. Therefore, the name type code in this field should be “L - Legal”. Refer to [HL7 Table 0200 - Name Type](#HL70200) for valid values.

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

***Definition:***This field contains the family name under which the mother was born (i.e., before marriage). It is used to distinguish between patients with the same last name.

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

***Definition:***This field contains the patient’s date and time of birth.

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

***Definition:***This field contains the patient’s sex. Refer to [User-defined Table 0001 - Administrative Sex](#HL70001) for suggested values.

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

***Definition:*** Not anticipated for use in immunization messages.

This field was used in the 2.3.1 Implementation Guide. Alias names should be placed in the patient name field.

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

***Definition:*** This field refers to the patient’s race. Refer to [User-defined Table 0005 - Race](#HL70005) for suggested values. The second triplet of the CE data type for race (alternate identifier, alternate text, and name of alternate coding system) is reserved for governmentally assigned codes.

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

***Definition:*** This field contains the mailing address of the patient. Address type codes are defined by HL7 Table 0190 - Address Type. Multiple addresses for the same person may be sent in the following sequence: The primary mailing address must be sent first in the sequence (for backward compatibility); if the mailing address is not sent, then a repeat delimiter must be sent in the first sequence.

This field is used for any type of address that is meaningfully associated with the client/patient. For instance Birth State is the state of the address of the birthing location, address type = BDL.

A person’s address may be sent in this field or in the NK1 segment with a relationship code indicating Self. Local implementations should clarify how these addresses will be handled.

####

#### PID-12 County Code (IS) 00115

***Definition:*** Not anticipated for use in immunization messages. County code belongs in the Address field (PID-11).

#### PID-13 Phone Number - Home ‑ (XTN) 00116

***Definition:***This field contains the patient’s personal phone numbers. All personal phone numbers for the patient are sent in the following sequence. The first sequence is considered the primary number (for backward compatibility). If the primary number is not sent, then a repeat delimiter is sent in the first sequence. 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 Table 0201 - Telecommunication Use Code and HL7 Table 0202 - Telecommunication Equipment Type for valid values.

#### PID-14 Phone Number ‑ Business‑ (XTN) 00117

***Definition:*** This field contains the patient’s business telephone numbers. All business numbers for the patient are sent in the following sequence. The first sequence is considered the patient’s primary business phone number (for backward compatibility). If the primary business phone number is not sent, then a repeat delimiter must be sent in the first sequence. Refer to HL7 Table 0201 - Telecommunication Use Code and HL7 Table 0202 - Telecommunication Equipment Type for valid values.

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

***Definition:*** This field contains the patient’s primary language. HL7 recommends using ISO table 639 as the suggested values in [User-defined Table 0296 - Primary Language](#HL70296).

Note that HL7 has changed the code set for language in order to harmonize with the international standard, ISO639. These codes differ from the values published in the Version 2.3.1 Implementation Guide.

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

***Definition:*** This field further defines the patient’s ancestry. Refer to [User-defined Table 0189 - Ethnic Group](#HL70189). 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.

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

***Definition:*** This field indicates whether the patient was part of a multiple birth. Refer to HL7 Table 0136 - Yes/No Indicator for valid values.

Y the patient was part of a multiple birth

N the patient was a single birth

Empty multiple birth status is undetermined.

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

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

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

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

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

***Definition:*** This field indicates whether the patient is deceased. Refer to HL7 Table 0136 - Yes/no Indicator for valid values.

Y the patient is deceased

N the patient is not deceased

Empty status is undetermined

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

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

#### PID-34 Last Update Facility (HD) 01538

***Definition:*** This field identifies the facility of the last update to a patient’s/person’s identifying and demographic data, as defined in the PID segment.

## PV1—Patient Visit Segment

The PV1 segment is used to convey visit specific information. The primary use in immunization messages in previous releases was to carry information about the client’s eligibility status. This is now recorded at the immunization event (dose administered) level. Use of this segment for the purpose of reporting patient eligibility for a funding program at the visit level will decline.

## QAK—Query Acknowledgement Segment

Table ‑-Query Acknowledgement Segment

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

### QAK Field Definitions

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

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

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

***Definition:*** This field allows the responding system to return a precise response status. It is especially useful in the case where no data is found that matches the query parameters, but where there is also no error. It is defined with [HL7 Table 0208 - Query Response Status](#HL70208).

#### QAK-3 Message Query Name (CE) 01375

***Definition:*** This field contains the name of the query. This shall mirror the QPD-1 (Message Query Name) found in the query message that is being responded to.

## QPD – Query Parameter Definition

The QPD segment defines the parameters of the query.

Table ‑-Query Parameter Definition (QPD)

| SEQ | LEN | Data Type | CDC IG Cardinality | *<System Name>* Cardinality | Value Set | ELEMENT NAME | CDC IG Usage | *<System Name>* Usage | Comment |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1 |  | CE | [1..1] |  | 0471 | Message Query Name  | R |  |  |
| 2 | 32 | ST |  |  |  | Query Tag | R |  | Generated by the initiating system. |
| 3-n |  | varies |  |  |  | User Parameters (in successive fields)  | R |  | The specification of this sequence is found in the profile specific to the use case. |

### QPD Field Definitions

#### QPD-1 Message Query Name (CE) 01375

***Definition:*** This field contains the name of the query. These names are assigned by the function-specific chapters of this specification. It is one to one with the conformance statement for this query name, and it is in fact an identifier for that conformance statement.

#### QPD-2 Query Tag (ST) 00696

***Definition:*** This field must be valued by the initiating system to identify the query, and may be used to match response messages to the originating query.

The responding system is required to echo it back as the first field in the query acknowledgement segment (QAK).

This field differs from *MSA-2-Message control ID* in that its value remains constant for each message (i.e. all continuation messages) associated with the query, whereas *MSA-2-Message control ID* may vary with each continuation message, since it is associated with each individual message, not the query as a whole.

#### QPD-3 User Parameters (Varies) 01435

***Definition:*** These successive parameter fields hold the values that the Client passes to the Server.

The client data is presented as a sequence of HL7 fields. Beginning at *QPD-3-User parameters*, the remaining fields of the QPD segment carry user parameter data. Each QPD user parameter field corresponds to one parameter defined in the Conformance Statement, where each name, type, optionality, and repetition of each parameter has been specified. While these parameters are understood to be usually “and-ed” together, the user must inspect the required Conformance Statement to understand properly each. Except in the QSC variant, the parameter names do not need to be stated in the query; they are understood to be positional based on the Conformance Statement.

Each parameter field may be specified in the Conformance Statement to be of any single data type, including the complex QIP and QSC types. Parameter fields in the QPD segment appear in the same order as in the Conformance Statement.

## RCP – Response Control Parameter Segment

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

Table ‑-Response Control Parameter

| SEQ | LEN | Data Type | CDC IG Cardinality | *<System Name>* Cardinality | Value set | ELEMENT NAME | CDC IG Usage | *<System Name>* Usage | Comments |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1 | 1 | ID | [0..1] |  | 0091 | Query Priority | O |  | Constrain to empty or I. Immediate priority is expected. |
| 2 |  | CQ | [0..1] |  | 0126 | Quantity Limited Request | O |  | This field may contain a maximum number of records that may be returned. The first component contains the count and the second contains RD for records. |
| 3 |  | CE | [0..1] |  | 0394 | Response Modality | O |  |  |
| 4 |  | TS | [0..1] |  |  | Execution and Delivery Time | O |  |  |
| 5 | 1 | ID | [0..1] |  | 0395 | Modify Indicator | O |  |  |
| 6 |  | SRT | [0..1] |  |  | Sort-by Field | O |  |  |
| 7 |  | ID | [0..\*] |  |  | Segment group inclusion  | O |  |  |

### RCP Field Definitions

#### RCP-1 Query Priority (ID) 00027

***Definition:*** This field contains the time frame that the response is expected. Refer to [HL7 Table 0091 - Query priority](#HL70091) for valid values. Table values and subsequent fields specify time frames for response. Only I for immediate shall be used for this field.

#### RCP-2 Quantity Limited Request (CQ) 00031

***Definition:*** This field contains the maximum length of the response that can be accepted by the requesting system. Valid entries are numerical values (in the first component) given in the units specified in the second component. Default is LI (lines). The expected type is records, so the second component is constrained to RD.

Note that this field is the maximum total records to return. The Version 2.5.1 standard indicates the maximum number to return in each batch. No batching of responses is permitted in this Guide.

#### RCP-3 Response Modality (CE) 01440

***Definition:*** This field specifies the timing and grouping of the response message(s). Refer to [HL7 Table 0394 – Response modality](#HL70394) for valid values.

#### RCP-7 Segment Group Inclusion (ID) 01594

***Definition:*** Specifies those optional segment groups which are to be included in the response. Refer to [HL7 Table 0391—Segment group](#HL70391) for values for Segment Group. This is a repeating field, to accommodate inclusion of multiple segment groups. The default for this field, not present, means that all relevant groups are included.

**Note:** Although the codes for segment groups are taken from [HL7 Table 0391](#HL70391), the exact segment-level definition of a segment group (e.g. PIDG) is given only in the conformance statement of the query in which this segment group appears.

## RXA-- Pharmacy/Treatment Administration Segment

The RXA segment carries pharmacy administration data. It is a child of an ORC segment, which a repeating segment in the RSP and VXU messages. Because ORC are allowed to repeat an unlimited numbers of vaccinations may be included in a message. Each RXA must be preceded by an ORC.[[6]](#footnote-6)

There is a change requiring an ORC conflicts with the previous implementation Guide. In that, ORC is optional and in fact rarely included in a VXU.

Table 5‑21 Pharmacy/Treatment Administration (RXA)

| SEQ | LEN | Data Type | CDC IG Cardinality | *<System Name>* Cardinality | Value Set | ELEMENT NAME | CDC IG Usage | *<System Name>* Usage | Comment |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1 | 4 | NM | [1..1] |  |  | Give Sub-ID Counter | R |  | Constrain to 0 (zero) |
| 2 | 4 | NM | [1..1] |  |  | Administration Sub-ID Counter | R |  | Constrain to 1 |
| 3 |  | TS | [1..1] |  |  | Date/Time Start of Administration | R |  |  |
| 4 |  | TS | [0..1] |  |  | Date/Time End of Administration | RE |  | If populated, this should be the same as Start time (RXA-3) |
| 5 |  | CE | [1..1] |  | 0292 | Administered Code | R |  | CVX code is strongly preferred. |
| 6 | 20 | NM | [1..1] |  |  | Administered Amount | R |  | If administered amount is not recorded, use 999. |
| 7 |  | CE | [0..1] |  |  | Administered Units | CE |  | If previous field is populated by any value except 999, it is required. |
| 8 |  | CE | [0..1] |  |  | Administered Dosage Form | O |  |  |
| 9 |  | CE | [0..\*] |  | NIP 0001 | Administration Notes | RE |  | The primary use of this field it to convey if this immunization record is based on a historical record or was given by the provider recording the immunization. All systems should be able to support this use. Other uses of this field are permitted, but need to be specified locally. |
| 10 |  | XCN | [0..1] |  |  | Administering Provider | RE |  | This is the person who gave the administration or the vaccinator. It is not the ordering clinician. |
| 11 |  | LA2 | [0..1] |  |  | Administered-at Location | RE |  |  |
| 12 | 20 | ST | [0..1] |  |  | Administered Per (Time Unit) | O |  |  |
| 13 | 20 | NM | [0..1] |  |  | Administered Strength | O |  |  |
| 14 |  | CE | [0..1] |  |  | Administered Strength Units | O |  |  |
| 15 | 20 | ST | [0..\*] |  |  | Substance Lot Number | RE |  |  |
| 16 |  | TS | [0..1] |  |  | Substance Expiration Date | CE |  | If the lot number is populated, this field should be valued. |
| 17 |  | CE | [0..\*] |  | 0227 | Substance Manufacturer Name | RE |  |  |
| 18 |  | CE | [0..\*] |  |  | Substance/Treatment Refusal Reason | C |  | If the Completion status is RE, then this shall be populated |
| 19 |  | CE | [0..1] |  |  | Indication | O |  |  |
| 20 | 2 | ID | [0..1] |  | 0322 | Completion Status | RE |  | If this field is not populated, it is assumed to be CP or complete. If the Refusal reason is populated, this field shall be set to RE. |
| 21 | 2 | ID | [0..1] |  | 0323 | Action Code - RXA | RE |  |  |
| 22 |  | TS | [0..1] |  |  | System Entry Date/Time | O |  |  |
| 23 | 5 | NM | [0..1] |  |  | Administered Drug Strength Volume | O |  |  |
| 24 |  | CWE | [0..1] |  |  | Administered Drug Strength Volume Units | O |  |  |
| 25 |  | CWE | [0..1] |  |  | Administered Barcode Identifier | O |  |  |
| 26 | 1 | ID | [0..1] |  | 0480 | Pharmacy Order Type | O |  |  |

### RXA Field Definitions

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

***Definition:*** This field is used to match an RXA and RXG. Not a function under IIS. Constrain to 0 (zero).

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

***Definition:*** This field is used to track multiple RXA under an ORC. Since each ORC has only one RXA in immunization messages, constrain to 1. This should not be used for indicating dose number, which belongs in an OBX.

Note that the previous Implementation Guide suggested that this be used for indicating dose number. This use is no longer supported.

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

***Definition:*** The date this vaccination occurred. In the case of refusal or deferral, this is the date that the refusal or deferral was recorded.

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

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

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

***Definition:*** This field identifies the medical substance administered. If the substance administered is a vaccine, CVX codes should be used in the first triplet to code this field (see HL7 Table 0292 - Codes for vaccines administered). The second set of three components could be used to represent the same vaccine using a different coding system, such as Current Procedural Terminology (CPT). CVX code is the strongly preferred code system.

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

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

#### RXA-7 Administered units (CE) 00349

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

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

***Definition:*** This field is used to indicate whether this immunization record is based on a historical record or was given by the reporting provider. It should contain the information source (see *NIP-defined Table 0001 - Immunization Information Source)*. The first component shall contain the code, the second the free text and the third shall contain the name of the code system. (NIP001) Sending systems should be able to send this information. Receiving systems should be able to accept this information.

This field may be used for other notes if specified locally. The first repetition shall be the information source. If other notes are sent when information source is not populated, then the first repetition shall be empty.

Other notes may include text only in component 2 of the repeat. Acceptance of text only is by local agreement only.

Information source is an NVAC core data element. It speaks to the reliability of the immunization record. IIS rely on this information.

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

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

Note that previous Implementation Guide (2.3.1) overloaded this field by using local codes to indicate administering provider, ordering provider and recording provider. This is a misuse of this field and not supported in this Guide. The ordering and entering providers are indicated in the associated ORC segment.

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

***Definition:*** The name and address of the facility that administered the immunization. Note that the components used are:

Component 4: The facility name/identifier.

Subcomponent 1:identifier[[7]](#footnote-7)

Subcomponent 2: Universal ID This shall be an OID, if populated. Note that this should not be a local code, but rather a universal id code.

Subcomponent 3: Universal ID type (specify which universal id type)

Note that if subcomponent 1 is populated, 2 and 3 should be empty. If subcomponent 2 is populated with an OID, subcomponent 3 must be populated with ISO.

Component 9-15: Facility address.

Components not specifically mentioned here are not expected in immunization messages.

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

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

***Note:*** The lot number is the number printed on the label attached to the container holding the substance and on the packaging, which houses the container. If two lot numbers are associated with a product that is a combination of different components, they may be included in this field. The first repetition should be the vaccine.

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

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

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

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

***Definition:*** This field contains the manufacturer of the medical substance administered.

***Note:*** For vaccines, code system MVX should be used to code this field.

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

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

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

***Definition:*** This field indicates if the dose was successfully given. It must be populated with RE if RXA-18 is populated with NA. If a dose was not completely administered or if the dose were not potent this field may be used to label the immunization. . If this RXA has a CVX of 998 (no vaccine administered) then this shall be populated with NA.

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

***Definition:*** This field indicates the action expected by the sending system. It can facilitate update or deletion of immunization records. This field has a usage of RE. If it is left empty, then receiving systems should assume that the action code is A.

ORC-3, Placer order number, may be used to link to a specific immunization if the system receiving the request has recorded this from the initial order. Local implementers should specify its’ use in a local implementation guide.

The action code U (Update system) is used to indicate to a subordinate receiver that a previously sent immunization should be changed. Most IIS have specific criteria for determining whether to add or update an immunization that does not rely directly on this field. For this reason it is common practice to indicate action as Add even if this vaccination has been previously reported. It is important not assume that Updates will be or need to be specifically indicated.

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

***Definition:*** This field records the date/time that this record was created in the originating system. Local implementations should specify its’ use.

## RXR-- Pharmacy/Treatment Route Segment

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

Table 5‑22 Pharmacy/Treatment Route (RXR)

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

### RXR Field Definitions

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

***Definition:*** This field is the route of administration.

Refer to [User-Defined Table 0162 - Route of Administration](#HL70162) for valid values.

This will change, based on HITSP. They specify use of FDA list. Systems should be prepared to accept either FDA or HL7 codes.

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

***Definition:***This field contains the site of the administration route.

# Messages for Transmitting Immunization Information

Note: This section is a direct copy from Chapter 6 of the CDC IG. However, new columns have been added where your local system may have differences. Remember that it is acceptable to further constrain the CDC IG, but not acceptable to loosen the CDC IG.

The CDC IG contains no local business rules. Local business rules can be vitally important to a successful interface between an external system and your specific IIS. It is in this chapter and the next chapter where local business rules important for interoperability can be documented. Where to best place these business rules depends greatly on the business rules themselves and as such will be left to the local writer of this guide to properly document.

The CDC IG focuses on Immunization Messaging and therefore does not address ADT messages in detail. If your IIS intends to support ADT messages, greater specifics about your implementation of ADT messages is needed than provided by the CDC IG. A great place to start is the IHE Profile for Patient Identity Cross Reference (PIX). If your IIS does not support ADT messages at all, that should also be noted to avoid confusion between your IG and the CDC IG.

The CDC IG includes specifics for sending messages in Batch. It is important to address whether or not your IIS supports BHS, BTS, FHS, and FTS.

Finally, the CDC IG offers up options for additional segments that were not defined in the CDC IG (IN1, IN2, IN3, etc…). If you plan to support them, you must define them clearly. If you do not plan to support them, the Usage can be changed to “X” in the “VXU Segment Usage” section below to avoid confusion.

For example, “Send Immunization History (VXU)” could be defined in the following manner. It is important to note that these are example changes for an example system and not a suggestion for your system.

Send Immunization History--VXU

Systems may send unsolicited immunization records using a VXU. This may be a record that is new to the Example System or may be an update to an existing record. The following table lists the segments that are part of a VXU. See Appendix B for detailed activity diagrams and example messages that illustrate the processing of this message.

Table 6-X --VXU Segment Usage

| Segment | CDC IG Cardinality | <SYSTEM NAME> Cardinality | CDC IG Usage | <SYSTEM NAME> Usage | Comment |
| --- | --- | --- | --- | --- | --- |
| MSH | [1..1] | [1..1] | R | R | Every message begins with an MSH. |
| [{SFT }] | [0..\*] | [0..0] | O | X | Example System does not support this segment |
| PID | [1..1] | [1..1] | R | R | Every VXU has one PID segment. |
| PD1  | [0..1] | [1..1] | RE | R | Every VXU has one PD1 segment. |
| NK1  | [0..\*] | [0..\*] | RE | RE | The PID segment in a VXU may have zero or more NK1 segments. |
| PV1 | [0..1] | [0..1] | RE | RE | The PID segment in a VXU may have zero or one PV1 segment. Subsequent messages regarding the same patient/client may have a different PV1 segment. |
| PV2  | [0..1] | [0..0] | O | X | Example System does not support this segment |
| GT1  | [0..\*] | [0..0] | O | X | Example System does not support this segment |
| Begin Insurance group | [0..\*] | [0..0] | O | X | Example System does not support this grouping |
| IN1 | [0..1] | [0..0] | O | X | Example System does not support this segment |
| IN2  | [0..1] | [0..0] | O | X | Example System does not support this segment |
| IN3  | [0..1] | [0..0] | O | X | Example System does not support this segment |
| End Insurance group |  |
| Begin Order group | Each VXU may have zero or more Order groups |
| ORC | [1..\*] | [1..1] | RE | RE | The PID segment in a VXU may have zero or more ORC segments. |
| TQ1 | [0..1] | [0..0] | O | X | Example System does not support this segment |
| TQ2  | [0..1] | [0..0] | O | X | Example System does not support this segment |
| RXA | [1..1] | [1..1] | R | R | Each ORC segment in a VXU must have one RXA segment. Every RXA requires an ORC segment. |
| RXR  | [0..1] | [0..1] | RE | RE | Every RXA segment in a VXU may have zero or one RXR segments. |
| OBX | [0..\*] | [0..\*] | RE | RE | Every RXA segment in a VXU may have zero or more OBX segments. |
| NTE  | [0..1] | [0..1] | RE | RE | Every OBX segment in a VXU may have zero or one NTE segment. |
| End Order Group |  |

| The example system applies the following local business rules to VXU messages:1. Any vaccines with a vaccination date prior to the patient’s birth date will be rejected.
2. Any vaccines with a vaccination date into the future will be rejected as invalid and will not be processed.
 |
| --- |

The changes made by the example system are defined below:

1. SFT segment
	1. The example system does not support the SFT segment and therefore changed the Cardinality to “[0..0]” and the Usage to “X”. If a sending system sends an SFT segment, the example system should simply ignore it and continue processing.
2. PD1 segment
	1. The example system changed the PD1 segment to be Required and as a result, changed the cardinality to “[1..1]”
3. PV2, GT1, IN1, IN2, IN3, TQ1, and TQ2 segments
	1. The example system changed the PV2, GT1, IN1, IN2, IN3, TQ1, and TQ2 segments from “O” (Optional) to “X” (Not Supported. This also changed the cardinality to “[0..0]”. If a sending system sends any of these segments, the example system should simply ignore them and continue processing.
4. Local Business rules
	1. The example system had some local business rules which are technically outside of HL7 but add value for the sending system to better understand how to exchange data with the Example system.>

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

Table 6‑1-Supported Messages

| **Message** | **Purpose** | **Related Messages** | **Associated Profiles** | ***<System Name>* Supported** |
| --- | --- | --- | --- | --- |
| VXU | Send Immunization History | ACK |  | Yes/No |
| QBP | Request Immunization History and Request Person Id | RSP | Z34^CDC | Yes/No<If you plan to support this, see chapter 7 for CDC IG details> |
| RSP | Respond to Request for Immunization Record and Respond to Request for Person Id | QBP | Z31^CDCZ32^CDC | Yes/No<If you plan to support this, see chapter 7 for CDC IG details> |
| ACK | Send Message Acknowledgement | VXU, ADT, QBP |  | Yes/No |
| ADT | Send Person Demographic Data | ACK |  | Yes/No<CDC IG does not provide detailed profiles on an ADT message. You will need to provide detailed specifics on your ADT Message implementation> |

## Send Immunization History--VXU

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

Table 6‑2--VXU Segment Usage

| **Segment** | **CDC IG Cardinality** | ***<System Name>* Cardinality** | **CDC IG Usage** | ***<System Name>* Usage** | **Comment** |
| --- | --- | --- | --- | --- | --- |
| MSH | [1..1] |  | R |  | Every message begins with an MSH. |
| [{SFT }] | [0..\*] |  | O |  | Not described in this Guide. May be locally specified. |
| PID | [1..1] |  | R |  | Every VXU has one PID segment. |
| PD1  | [0..1] |  | RE |  | Every PID segment in VXU may have one or less PD1 segment |
| NK1  | [0..\*] |  | RE |  | The PID segment in a VXU may have zero or more NK1 segments. |
| PV1 | [0..1] |  | RE |  | The PID segment in a VXU may have zero or one PV1 segment. Subsequent messages regarding the same patient/client may have a different PV1 segment. |
| PV2  | [0..1] |  | O |  | Not described in this Guide. May be locally specified. |
| GT1  | [0..1] |  | O |  | Not described in this Guide. May be locally specified. |
| IN1 | [0..1] |  | O |  | Not described in this Guide. May be locally specified. |
| IN2  | [0..1] |  | O |  | Not described in this Guide. May be locally specified. |
| IN3  | [0..1] |  | O |  | Not described in this Guide. May be locally specified. |
| Begin Order group | Each VXU may have zero or more Order groups |
| ORC | [1..\*] |  | RE |  | The PID segment in a VXU may have one or more ORC segments. |
| TQ1 | [0..1] |  | O |  | Not described in this Guide. May be locally specified. |
| TQ2  | [0..1] |  | O |  | Not described in this Guide. May be locally specified. |
| RXA | [1..1] |  | R |  | Each ORC segment in a VXU must have one RXA segment. Every RXA requires an ORC segment. |
| RXR  | [0..1] |  | RE |  | Every RXA segment in a VXU may have zero or one RXR segments. |
| OBX | [0..\*] |  | RE |  | Every RXA segment in a VXU may have zero or more OBX segments. |
| NTE  | [0..1] |  | RE |  | Every OBX segment in a VXU may have zero or one NTE segment. |
| End Order Group |  |

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

## Acknowledging a Message--ACK

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

Table 6‑3 Message Acknowledgement Segment (ACK)

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

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

# Query and Response Profile (QBP/RSP)

Note: The query and response profile defined in the CDC IG is very detailed and in most cases can be followed as is. Based on the QBP/RSP changes made in Chapter 6 above, this profile may have to change slightly, and should obviously be noted, but it may be possible, to simply reference Chapter 7 of the CDC IG for detailed specifics. If the intention is to support the Query and Response Profile as is in the CDC IG, it only adds confusion to copy/paste and duplicate here. It is important to specify the release of the CDC IG when referring to it.

# Change History

Note: A detailed change history for implementers will be helpful as new versions of your implementation guide are released.

| **Version** | **Date** | **Author** | **Location** | **Change** |
| --- | --- | --- | --- | --- |
| 0.1 | 11/16/2010 | J. Doe | Sec. or Page # | Description of Change |

# Appendix A: Code Tables

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

User-defined Table 0064 - Financial class [NIP suggested values] (use in OBX-5 for vaccine eligibility)

Financial class references a client’s eligibility status at the time of vaccine administration. It is the eligibility of the client for the vaccine administered. The values in this table relate to eligibility for the Vaccine for Children (VFC) program.

Local implementations may define and document local codes. Each state immunization program may have locally specified funding programs for immunizations. In order to assure that each is unique across states, codes should be created that begin with the grantee assigning authority code from table 0363 in the Implementation Guide for Immunization Messaging, release 1.3. This would be followed by sequential number, left padded to a length of 2. For example if Alaska had a funding program, they would create a code of AKA01 for the first program. It is incumbent on the state or other jurisdiction to clearly describe the requirements that qualify a person for that funding program. For instance if the hypothetical funding program in Alaska covered people who were too old for VFC program but would otherwise qualify because they were Medicaid eligible, then they would define the code as:

“Client is currently on MEDICAID and is older than 19 years old.”

Note that funding source for a specific immunization is different from eligibility for funding program ( Financial Class).

|  |  |  |
| --- | --- | --- |
| Code | Label | Definition |
| V01 | Not VFC eligible | Client does not qualify for VFC because they do not have one of the statuses below. This category does not include the underinsured (see V08). |
| V02 | VFC eligible-Medicaid/Medicaid Managed Care | Client is currently on Medicaid or Medicaid managed care. |
| V03 | VFC eligible- Uninsured | Client does not have insurance coverage for vaccinations. |
| V04 | VFC eligible- American Indian/Alaskan Native | Client is a member of a federally recognized tribe. |
| V05 | VFC eligible-Federally Qualified Health Center Patient (under-insured) | Client has insurance that partially covers vaccines received on visit and so is eligible for VFC coverage at a Federally Qualified Health Center. The client must be receiving the immunizations at the FQHC. |
| ***V06***  | ***Deprecated [VFC eligible- State specific eligibility (e.g. S-CHIP plan)]***  | ***Do not use this code. State specific funding should either use V07 or a state generated code.***  |
| ***V07***  | ***Local-specific eligibility***  | ***Client is eligible for state supplied vaccine based on local specific rules and the vaccine administered is eligible for state- funding. .***  |
| ***V08***  | ***Deprecated [Not VFC eligible-underinsured]***  | ***Do not use this code. The MIROW effort determined that persons in this situation are V01, not VFC eligible. It is not necessary to differentiate this sub-class of Not VFC eligible.***  |
| AKA01 | Adult not insured | Client is currently on MEDICAID and is older than 19 years old. |

# Appendix B: Guidance on Usage and Example Messages

Note: Based on your defined HL7 Implementation Guide, it will be helpful to provide HL7 guidance on Usage and example messages for implementers. Examples should be in lieu of those examples in the CDC IG as your implementation guide was defined with more specific local business rules, code tables, constraints, and usages.

An example message extends upon the example NK1 segment changes in the Chapter 5 red text.

## Example VXU # 1-Basic message:

Storyboard:

Johnny New Patient (male), born 4/14/09 has had 1 dose of Hep B on 4/15/09, according the record brought in by Mom (Sally Patient). They live at 123 Any Street, Somewhere, Wisconsin 54000. Nurse Sticker at Dalittle Clinic (DCS\_DC), administers the following shots on 5/31/09:

* DTAP-Hep B-IPV (Pediarix) lot # xy3939 IM
* HIB (ActHIB) lot # 33k2a IM

They were all ordered by Dr Mary Pediatric who belongs to Dabig Clinical System (DCS). Mom acknowledged that his data may be shared with other providers. Johnny is eligible for Medicaid. His medical record number in Dabig Clinical System is 432155. Myron Clerk entered the information into the EHRs (MYEHR).

The information was sent from Dabig Clinical System to the State IIS

Note that we will indicate the end of each segment with a <CR>. Segments may wrap around in this document. We will insert a blank line between each segment for increased readability.

MSH|^~\&|MYEHR|DCS|||20090531145259||VXU^V04^VXU\_V04|3533469|P|2.5.1||||AL <CR>

PID|1||432155^^^DCS^MR||Patient^Johnny^New^^^^L||20090414150308|M|||123 Any St^^Somewhere^WI^54000^^L<CR>

PD1||||||||||||N|20090531<CR>

NK1|1|Patient^Sally|MTH^mother^HL70063|123 Any St^^Somewhere^WI^54000^^L|^PRN^PH^^^608^5551212|||||||||||||||eng<CR>

PV1|1|R||||||||||||||||||V02^20090531<CR>

ORC|RE||197023^DCS|||||||^Clerk^Myron|||||||DCS^Dabig Clinical System^StateIIS<CR>

RXA|0|1|20090415132511|20090415132511|31^Hep B Peds NOS^CVX|999|||01^historical record^NIP0001|||||||| <CR>

ORC|RE||197027^DCS|||||||^Clerk^Myron||^Pediatric^MARY^^^^^^^L^^^^^^^^^^^MD<CR>

RXA|0|1|20090531132511|20090531132511|48^HIB PRP-T^CVX|999|||00^new immunization record^NIP0001|^Sticker^Nurse|^^^DCS\_DC||||33k2a||PMC^sanofi^MVX<CR>

RXR|C28161^IM^NCIT^IM^IM^HL70162|<CR>

ORC|RE||197028^DCS|||||||^Clerk^Myron||^Pediatric^MARY^^^^^^^L^^^^^^^^^^^MD<CR>

RXA|0|1|20090531132511|20090531132511|110^DTAP-Hep B-IPV^CVX|999|||00^new immunization record^NIP0001|^Sticker^Nurse|^^^DCS\_DC||||xy3939||SKB^GSK^MVX<CR>

RXR|IM^IM^HL70162^C28161^IM^NCIT|<CR>

1. This Guide does not support repeat of this field. It assumes that each error will be contained in one ERR segment. If the same error occurs more than once, there will be one ERR for each. [↑](#footnote-ref-1)
2. Details on MessageFormat can be found at <http://java.sun.com/products/jdk/1.2/docs/api/java/text/MessageFormat.html>. [↑](#footnote-ref-2)
3. Available from ISO 1 Rue de Varembe, Case Postale 56, CH 1211, Geneve, Switzerland [↑](#footnote-ref-3)
4. The length of the observation field is variable, depending upon value type. See *OBX-2 value type*. [↑](#footnote-ref-4)
5. Local policies determine how data are protected. In general, it indicates who may view the client’s data. It may be as narrow as just the provider that entered the information. [↑](#footnote-ref-5)
6. The HL7 Version 2.5.1 document clearly indicates that any RXA must be associated with an ORC. In the case of immunization, each immunization will have its own ORC. [↑](#footnote-ref-6)
7. This value should uniquely identify a specific facility. Systems may choose to publish a table with local values. [↑](#footnote-ref-7)