*HL7 **2.5.1** – General Transfer Specification*

Introduction

The Georgia Immunization Information System (GRITS) system has made available an interactive user interface on the World Wide Web for authorized Georgia users to enter, query, and update client immunization records. The Web interface makes GRITS information and functions available on desktops around the state. However, some immunization providers already store and process similar data in their own information systems and may wish to keep using those systems while also participating in the statewide central repository. Others may have different billing needs and may decide they don't want to enter data into two diverse systems. GRITS has been enhanced to accept Health Level Seven (HL7) Version 2.5.1 for batch and real time loads to submit client and immunization information to GRITS.

The Health Level Seven (HL7) Standard

The ANSI HL7 standard is widely used for data exchange in the health care industry. The full standard is quite lengthy, covering a variety of situations in patient care and health care finance and no single application is likely to use all of its content. The CDC has worked with Immunization Information Systems (IIS's) to create a set of HL7 messages that permit exchange of immunization data. This document covers the subset of HL7 2.5.1 that will be used for client and immunization records exchanged between GRITS and outside systems.

- The basic unit transmitted in an HL7 implementation is the **message**.
- Messages are made up of several **segments**, each of which is one line of text, beginning with a three-letter code identifying the segment type.
- Segments are in turn made up of several **fields** separated by a delimiter character, "|". Delimiters can be defined by the user in MSH-2. The recommend delimiters for immunization messages are
  - <CR>=Segment terminator;
  - "|" = Field Separator;
  - '^' =Component Separator;
  - '&' = Sub-Component Separator;
  - '~' Repetition Separator; and
  - '\' = Escape Character. (See them bolded in example below.)

MSH|**^~\&**||PCHPD||GRITS^^^|19991005032342||VXU^V04^VXU_V04|682299|P^|2.5.1^^|||ER|AL
PID|||CHRT101^^^^PI^|1^^^^^|SMITH^JOHN^JO^JR^^^L^|DOE^JAIN^^^^^M^|20040901|M||||
ORC|RE||23456|||||||||||||||||||||||||
RXA|0|1|120040903|20040903|08^Hep B, Adolescent or Pediatrics^CVX^^^|0.5
OBX|1|CE|64994-7^Eligibility^LN|1|V02^Medicaid^HL70064|||||F|||||VXC40^vaccine level^CDCPHINVS

Details for the structure of an HL7 messages are explained throughout this document. The example above shows the essentials of what a message looks like. Many fields are optional and this example could have included more information.

- **MSH** - Message Header segment identifies the source or owner of the information being sent (GRITS –assigned short name: PHCPD), destination or receiver (GRITS), and some specifics of the syntax of the message (i.e. message type, HL7 version).
- **PID** - Patient Identification segment provides patient's identification information such as client's name (John Jo. SMITH Jr), birth date (September 1, 2001, 20040901 in YYYYMMDD format), and other identifying fields.
- **ORC** – Common Order segment (ORC) tells that the Filler Order Number is 1, the unique identifier from the sending system.
- **RXA** - Pharmacy Administration segment carries immunization data for the client including the type of immunization tells that a DTP vaccine, with CPT code 90701, was administered on September 3, 2004, 20040903 (formatted as YYYYMMDD). Many fields are optional and this example may have more information included in it. Some segments can be repeated within a single message. In this example, the message could have included a second RXA segment to

record another immunization given.

- **OBX** – Observation/Result segment is used to identify the client eligibility at the time of the immunization. Also, GRITS will accept three types of observations: Contraindication/Precaution, Reaction to Immunization and Vaccine Adverse Events.

  Note: Each RXA segment **must** be associated with one ORC segment, based on HL7 2.5.1 standard.

HL7 does not specify how messages are transmitted. It is flexible enough to be used for both real-time interaction and large batches. The standard defines file header and file trailer segments that are used when a number of messages are gathered into a batch for transmission as a file.

Scope of This Document

The General Transfer Specification (GTS) documented here supports exchange of data between the registry repository and outside systems. This allows both the client and immunization records to be available in both systems, so as to avoid the need to enter data twice. The remainder of this document specifies how HL7 file messages are constructed for the purposes of the registry. This document covers only a small subset of the very extensive HL7 standard utilized by the GRITS system. Files of messages constructed from the guidelines in this document will fall within the HL7 standard, but there is a wide variety of other possible HL7 messages that are outside the scope of this document.

References

- See Version 2.5.1 of the Health Level 7 standard for a full description of all messages, segments, and fields. Information regarding HL7 is at www.hl7.org.

The National Immunization Program within the Center for Disease Control (www.cdc.gov/nip) has published an Implementation Guide for Immunization Data with the purpose of keeping the use of HL7 for immunization data as uniform as possible. GRITS follows the HL7 message set by adhering to the **CDC's National Immunization Program's Release 1.5 HL7 Version 2.5.1 Implementation Guide for Immunization Messages**
https://www.cdc.gov/vaccines/programs/iis/technical-guidance/downloads/hl7guide-1-5-2014-11.pdf

Message Segments: Field Specifications and Usage

HL7 Segment Structure

Each segment consists of several fields that are separated by "|", which is the field separator character. The tables below define how each segment is structured and contain the following columns:

COLUMN	DESCRIPTION
SEQ	The ordinal position of the field in the segment. Since GRITS does not use all possible fields, the HL7 standard, these are not always consecutive.
LEN	Maximum length of the field.
DT	HL7 data type of the field. See below for definition of HL7 data types.
R/M	R means required by HL7, and M means mandatory for GRITS. Blank indicates an optional field.
RP/#	Y means the field may be repeated any number of times, an integer gives the maximum number of repetitions, and a blank means no repetition is permitted. Most fields use no repetition.
TBL#	Number of the table giving valid values for the field.
ELEMENT NAME	HL7 name for the field.

- **HL7 data types.** Each field has an HL7 data type. Appendix A of this document lists and defines the HL7 data types needed for GRITS. The elemental data types Numeric (NM) and String (ST) consist of one value, while some data types, such as Extended Person Name (XPN) are composites.
- **Delimiter characters.** Field values of composite data types consist of several components separated by the **component separator**, "^". When components are further divided into sub-components, these are separated by the **sub-component separator**, "&". Some fields are defined to permit repetition separated by the **repetition character**, "~". When these special characters need to be included within text data, their special interpretations are prevented by preceding them with the **escape character**, "\".

MSH|^~\&| …..
XXX|field1|component1^component2^subcomponent3.1&subcomponent3.2^component4| …..
YYY|repetition1~repetition2| …..
ZZZ|data includes escaped \|\~ special characters| …..

In the example above, the Message Header (MSH) segment uses the field separator, "|", immediately after the "MSH" code that identifies the segment. This establishes what character serves as the field separator throughout the message. The next field, the four characters "^~\&", establishes, in order, the component separator character, the repetition character, the escape character, and the sub-component separator character that will apply throughout the message. The hypothetical "XXX" segment includes field1 with no internal structure, but the next field has several components separated by "^", and the third of these is made up of two sub-components separated by "&". The hypothetical "YYY" segment's first field permits repetition, in this example the two values "repetition1" and "repetition2". The hypothetical "ZZZ" segment's field has a text value that includes the characters "|~", and these are escaped to prevent their normal structural interpretation.

In GRITS, sub-components, repetition and text values requiring the escape character will be rare. Components within fields are common, since names and addresses are represented this way. Although HL7 permits the use of other delimiters GRITS will always use the recommended delimiters when sending files and requires their use for files received.

Rules for Sending Systems

The following rules are used by sending systems to construct HL7 messages.

- Encode each segment in the order specified in the message format.
- Begin the segment with the 3-letter segment ID (for example MSH).
- Precede each field with the data field separator ("|").
- Use HL7 recommended encoding characters ("^~\&").
- Encode the data fields in the order given in the table defining segment structure.
- Encode the data field according to its HL7 data type format.
- Do not include any characters for fields not used in the segment. Since later fields in the segment are encoded by ordinal position, fields that are not present do not reduce the number of field separators in the segment. For example, when the second and third fields are not present, the field separators maintain the ordinal position of the fourth field: **`|field1|||field4.`**
- Data fields not explicitly represented should be left empty. This is represented through no value between two field separators | |.
- Trailing separators may optionally be omitted. For example, | **`field1`** | **`field2`** | | | | is equivalent to |**field1**|**field2**, when field3 and subsequent fields are not present.
- End each segment with the segment terminator (always the carriage return character, ASCII hex 0D).

The following rules are used by receiving systems to process HL7 messages.

- Treat data segments that are expected but not present as if all data fields in the segment were not present.
- Require use of HL7 recommended Field Separator |, and Encoding characters ^~\& for encoding messages.
- Ignore any data segment that is included but not expected, rather than treating it as an error. The HL7 message types used by GRITS may include many segments besides the ones in this document, and GRITS ignores them. GRITS will not send messages with segments not documented in this specification, but reserves the right to specify more segments at a later date. The rule to ignore unexpected segments facilitates this kind of change.
- Ignore data fields found but not expected within a segment.
- The message segments below are needed to construct message types that are used by GRITS. Each segment is given a brief description excerpted from the HL7 standard. The tables define what fields make up each segment. Since GRITS does not use all the fields that HL7 defines, there are sometimes gaps in the ordinal sequence of fields. Following HL7 rules, the gaps do not diminish the number of field separators within the segment. For example, if the second and third fields in a segment are not present, their field separators remain in order to indicate that the next field present is the fourth: **field1**|||**field4**.

HL7 Message Types Used in GRITS Transmissions

GRITS uses these message types: ADT, VXU, ACK, QBP and RSP.

The ADT is used for sending out client data without any immunizations.
The VXU is used for sending client data and immunizations.
The ACK is used to acknowledge to the sender that a message has been received.
The QBP is used to query for a client's demographic, immunization and recommendation information (recommendations according to the ACIP schedule).
The RSP is used to respond to QBP message.

Each segment is one line of text ending with the carriage return character, so HL7 messages are readable and printable. The messages may appear somewhat cryptic due to the scarcity of white space. (The standard has provisions for inclusion of binary data, but the registry will not use these features.)

Square brackets [ ] enclose optional segments and curly braces {} enclose segments that can be repeated. Any number of NK1 segments could be included in the message. The full HL7 standard allows additional segments within these message types, but they are unused by GRITS. In order to remain compliant with HL7, their use will not result in an error, but the recipient can ignore the content of the message. The segments that are documented here are sufficient to support the principal registry functions of storing data about clients and immunizations.

ADT	**Update Patient Information**
MSH	Message Header
PID	Patient Identification
[*PD1]	Patient Additional Demographic
[{NK1}]	Next of Kin / Associated Parties
[{**OBX}]	Observation/Result

* The PD1 segment is required to indicate the client registry status is Inactive, the PD1-16 field must be populated with I – Inactive or P – Permanently Inactive – Deceased,)

**The only OBX segment that is valid within an ADT message is one that specifies a CONTRAINDICATION in the OBX-03 Value Type field. (i.e., 30945-0^Contraindication^LN)

VXU	**Unsolicited Vaccination Record Update**
MSH	Message Header
PID	Patient Identification
[PD1]	Patient Additional Demographic
[{NK1}]	Next of Kin / Associated Parties
{ORC	Common Order Segment
RXA	Pharmacy / Treatment Administration
[RXR]	Pharmacy / Treatment Route (Only one RXR per RXA segment)
[{OBX}]}	Observation/Result*

ACK	**General Acknowledgment**
MSH	Message Header
MSA	Message Acknowledgment
[{ERR}]	Error

*The only OBX segment that is valid within an ADT message is one that specifies a CONTRAINDICATION in the OBX-03 Value Type field. (i.e., 30945-0^Contraindication^LN)

When a VXU^V04^VXU_V04 (Unsolicited Vaccination Record Update) message type is sent with no ORC associated to a RXA segment, then the client will be rejected. Similarly, an ORC segment with no associated RXA segment will result in message rejection.

QBP	Query by Parameter
MSH	Message Header
QPD	Query Parameter Definition Segment
RCP	Response Control Parameter

Organizations send the Query By Parameter (QBP) message to request a patient's complete immunization history. The patient record includes demographic and immunization information.

RSP	Response
MSH	Message Header
MSA	Message Acknowledgment Segment
[ERR]	Error
QAK	Query Acknowledgment Segment
QPD	Query Parameter Definition Segment
PID	Patient Identification
PD1	Patient Additional Demographic
{NK1}	Next of Kin / Associated Parties
{ORC	Common Order Segment
RXA	Pharmacy / Immunization administration
[RXR]	Pharmacy / Treatment Route
[{OBX}]}	Observation / Result

GRITS responds to QBP messages with a file that contains a Response (RSP) message.

Batch Files of HL7 Messages

The definitions above tell how to create messages containing patient demographic and immunization data. Each message can logically stand on its own and HL7 is compatible with various methods of online and batch transmission. GRITS uses batch files to transmit many messages together. HL7 provides special header and footer segments to structure batch files. These segments are not part of any message, but serve to bracket the messages defined above. The structure of a batch file is as follows.

NOTE: When submitting HL7 Version 2.5.1 file, the header/trailer segments and the batch header/trailer segments are OPTIONAL.

```
FHS                (file header segment)
{BHS               (batch header segment)
 {[MSH               (zero or more HL7 messages)
    ....
    ....
    ....
]}
  BTS               (batch trailer segment)
}
FTS                (file trailer segment)
```

FHS

The File Header Segment is used to head a file (group of batches).

SEQ	LEN	DT	R/M	RP/#	TBL#	ELEMENT NAME
1	**1**	**ST**	**R**			**File Field Separator**
2	**4**	**ST**	**R**			**File Encoding Characters**
3	15	ST				File Sending Application
4	20	ST				File Sending Facility
6	20	ST				File Receiving Facility
7	26	TS				File Creation Date/Time
9	20	ST				File Name/ID
10	80	ST				File Header Comment
11	20	ST				File Control ID
12	20	ST				Reference File Control ID

Field Notes:

FHS-1 Same definition as the corresponding field in the MSH segment.
FHS-2 Same definition as the corresponding field in the MSH segment.
FHS-3 Same definition as the corresponding field in the MSH segment.
FHS-4 Same definition as the corresponding field in the MSH segment.
FHS-6 Same definition as the corresponding field in the MSH segment.
FHS-7 Same definition as the corresponding field in the MSH segment.
FHS-9 Name of the file as transmitted from the initiating system.
FHS-10 Free text, which may be included for convenience, but has no effect on processing.
FHS-11 This field is used to identify a particular file uniquely among all files sent from the sending facility identified in FHS-4.
FHS-12 Contains the value of FHS-11-file control ID when this file was originally transmitted. Not present if this file is being transmitted for the first time.

FTS

The File Trailer Segment defines the end of a file.

SEQ	LEN	DT	R/M	RP/#	TBL#	ELEMENT NAME
1	**10**	**NM**	**R**			**File Batch Count**
2	80	ST				File Trailer Comment

Field Notes:

FTS-1 The number of batches contained in this file. GRITS normally sends one batch per file and discourages sending multiple batches per file.

FTS-2 Free text, which may be included for convenience, but has no effect on processing.

BHS

The Batch Header Segment defines the start of a batch.

SEQ	LEN	DT	R/M	RP/#	TBL#	ELEMENT NAME
1	**1**	**ST**	**R**			**Batch Field Separator**
2	**4**	**ST**	**R**			**Batch Encoding Characters**
3	15	ST				Batch Sending Application
4	20	ST				Batch Sending Facility
6	20	ST				Batch Receiving Facility
7	26	TS				Batch Creation Date/Time
10	80	ST				Batch Comment
11	20	ST				Batch Control ID
12	20	ST				Reference Batch Control ID

Field Notes:

BHS-1 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 segment. GRITS requires | (ASCII 124).

BHS-2 This field contains the four characters in the following order: the component separator, repetition separator, escape characters and sub-component separator. GRITS requires ^~**&**, (ASCII 94, 126, 92 and 38 respectively).

BHS-3 Same definition as the corresponding field in the MSH segment.

BHS-4 Same definition as the corresponding field in the MSH segment.

BHS-6 Same definition as the corresponding field in the MSH segment.

BHS-7 Same definition as the corresponding field in the MSH segment.

BHS-10 Free text, which may be included for convenience, but has no effect on processing.

BHS-11 This field is used to uniquely identify a particular batch. It can be echoed back in *BHS-12-reference batch control ID* if an answering batch is needed. For GRITS purposes, the answering batch will contain ACK messages.

BHS-12 This field contains the value of *BHS-11-batch control ID* when this batch was originally transmitted. Not present if this batch is being sent for the first time. See definition for *BHS-11-batch control ID*.

BTS

The Batch Trailer Segment defines the end of a batch.

SEQ	LEN	DT	R/M	RP/#	TBL#	ELEMENT NAME
1	**10**	**ST**	**M**			**Batch Message Count**
2	80	ST				Batch Comment

Field Notes:

BTS-1 This field contains the count of the individual messages contained within the batch.

BTS-2 Free text, which can be included for convenience, has no effect on processing.

MSH – Message Header Segment

The MSH segment defines the intent, source, destination and some specifics of the syntax of a message.

SEQ	LEN	DT	R/M	RP/#	TBL#	ELEMENT NAME
1	1	ST	R			Field Separator
2	4	ST	R			Encoding Characters
3	180	HD				Sending Application
4	180	HD				Sending Facility
5	180	HD				Receiving Application
6	180	HD				Receiving Facility
7	26	TS_Z	R			Date/Time Of Message
9	15	MSG	R			Message Type
10	20	ST	R			Message Control ID
11	3	PT	R		0103	Processing ID
12	60	VID	R		0104	Version ID
15	2	ID	R		0155	Accept Acknowledgment Type
16	2	ID	R		0155	Application Profile Identifier
21	427	EI	CE			Message Profile Identifier

Field Notes:

MSH-1 Determines the field separator in effect for the rest of this message. GRITS requires the HL7 recommended field separator of "|".

MSH-2 Determines the component separator, repetition separator, escape character, and sub-component separator in effect for the rest of this message. GRITS requires the HL7 recommended values of ^~\&.

MSH-3 Name of the sending application. When sending, GRITS will use "GRITS" followed by the current version number of the registry. This field is an optional convenience. See MSH-4 and MSH-6 for the fields principally used to identify sender and receiver of the message.

MSH-4 Identifies for whom the message is being sent (the owner of the message information). When sending, GRITS will use "GRITS".

When the message is being sent to GRITS you must use the GRITS Organization Code of the Provider Organization that **owns** the information in the MSH4.1 segment (e.g., T1234). Contact the GRITS Help Desk for the appropriate GRITS Organization Code.

Note: If a larger health system will be submitting data as one Organization rather than as individual organization locations, the Organization Code for the health system may be used. Verify with GRITS Help Desk to confirm the best Organization ID to use.

MSH-5 Identifies the application receiving the message. When sending to GRITS this application is 'GRITS.'

MSH-6 Identifies the message receiver. When sending, GRITS will use the GRITS Organization Code assigned to the organization when first registered with GRITS.

MSH-7 Date and time of message requiring time zone the message was created. See the TS_Z data type.

MSH-9 This is a required field. Three components of this field give the HL7 message type (see **Table 0076**) and the HL7 triggering event (see **Table 0003**). Within HL7, the triggering event is considered to be the real-world circumstance causing the message to be sent. For GRITS purposes, this field should have the value ADT^A31^ADT_A05 for a message conveying only demographic information, the value VXU^V04^VXU_V04 for a message conveying demographic and immunization information or the value QBP^Q11^QBP_Q11 for a message querying for vaccination record. In acknowledgement messages the value will be ACK^V04^ACK.

MSH-10 This is a required field. Message rejection will result if nothing is received in this field. The message control ID is a string (which may be a number) uniquely identifying the message among all those ever sent by the sending system. It is assigned by the sending system and echoed back in the ACK message sent in response to identify the specific record which contains errors. ***It is important to have this identifier so providers can link outgoing transactions to a GRITS response (i.e. VXU to ACK).***

MSH-11 See Table 0103. The processing ID to be used by GRITS is **P** for production processing. If this field is null, an informational message is generated indicating that GRITS is defaulting to **P**.

MSH-12 See Table 0104. This is a required field. For the parser, the version number that is read in the first MSH-12 segment of the file, will be the version assigned to the "Type" field to indicate the type of data exchange request submitted. For example, use a value of "2.3.1" to indicate HL7 Version 2.3.1, "2.4" to indicate HL7 Version 2.4, or "2.5.1" to indicate HL7 Version 2.5.1.

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

MSH-15 See Table 0155. This field identifies the conditions where a system must return accept acknowledgments to this message. Use "**ER**" for GRITS. If the field is empty, GRITS will default to ER.

MSH-16 See Table 0155. Controls if GRITS creates an acknowledgment message. This field contains the conditions where GRITS returns application acknowledgment. If the field is empty, GRITS will assume the value of AL, acknowledges all messages. If a value of ER (acknowledgment when it contain errors), NE (no acknowledgment even if there were errors) and SU (acknowledgement only when there was successful completion) is sent, GRITS will default to AL and return all acknowledgements.

MSH-21 Contains the profile. For inbound VXU message type Z22 message identifier profile, MSH-21 will return acknowledge response Z23^CDCPHINVS. GRITS requires 'Z34' or 'Z44' in this field when the MSH-9 Message Type contains QBP^Q11^QBP_Q11 query request for QBP message type and GRITS finds one or more clients that match the search criteria. Message profiles contain detailed explanations of grammar, syntax, and usage for a message or message set.

There are Four Response Profiles

1. Z31^CDCPHINVS – Multiple candidate list (Analogous to the HL7 2.4 VXX Query response)
2. Z32^CDCPHINVS – Exact candidate match (Analogous to the HL7 2.4 VXR Query response)
3. Z33^CDCPHINVS – No candidate match found in the registry (Analogous to the HL7 2.4 QCK Query response)
4. Z42^CDCPHINVS - Response to Evaluated Immunization History and Forecast Query

Example:

```
MSH|^~\&||PCHPD||GRITS|20040930||VXU^V04^VXU_V04|test001|P|2.5.1|||ER|AL|||||Z22
^CDCPHINVS
```

MSA – Message Acknowledgement Segment

The MSA segment contains information sent while acknowledging another message. MSA-3 through MSA-6 fields are no longer used by GRITS.

SEQ	LEN	DT	R/M	RP/#	TBL#	ELEMENT NAME
1	2	ID	R	Y	0008	Acknowledgment Code
2	199	ST	R	Y		Message Control ID

Field Notes:

MSA-1 Acknowledgement code giving receiver's response to a message. AA (Application Accept) means the message was processed normally. AR (Application Rejection) and AE (Application Error). An informational or error message will be put in ERR-8 for ACK messages the optional ERR segment will be included.

MSA-2 The message control ID from MSH-10 in the message being acknowledged. This allows the sending system to associate this response with the message being responded to.

Example MSA-1 = AE:

```
MSA|AE|548823
```

Note:

If MSA-1 is AA, typically there is not an ERR segment. If it's an AA and there is an HL7 informational message, there will be an ERR segment and all the required fields will be populated.

Or, there may be some instances where the MSA-1 is AA or AE and the informational message, such as inventory was deducted, the only field populated in the ERR segment is ERR-8. ERR-2 through ERR-5 fields will be blank.

ERR – Error Segment

The ERR segment is used to add error comments to acknowledgment messages. If a message was rejected for functional reason, this segment will locate the error and described it using locally established codes. ERR-1 is not valid for HL7 2.5.1 processing.

SEQ	LEN	DT	R/M	RP/#	TBL#	ELEMENT NAME
2	80	ERL	RE	Y		Error Location
3		CWE	R		0357	Error Condition Code
4	1	ID	R		0516	Severity
5		CWE	RE		0533	Application Error Code
8		TX	RE			User Message

Field Notes:

ERR-2 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.

ERR-3 Identifies the HL7 (communication) error code. Refer to HL7 Table 357 – Message Error Condition Codes for valid values.

ERR-4 Identifies the severity of an application error. Knowing if something is Error, Warning or Information is intrinsic to how an application handles the content. Refer to HL7 Table 0516 - Error severity for valid values.
If ERR-3 has a value of "0", ERR-4 will have a value of "I". The Severity code indicates if the system sending the ACK or RSP (with error) is reporting an error that caused significant error loss. For instance the message was rejected or an important segment was rejected (e.g. RXA). This allows the system that initiated the message (VXU or QBP) to alert the user that there were issues with the data sent.

ERR-5 Application Error code. Application specific code identifying the specific error that occurred. Refer to User-defined Table 0533 for appropriate values.

ERR-8 Text of error, informational or warning message displayed to the application user.

Note: The informational error text is transmitted in field ERR-8. For example, if the Patient First Name is missing:

Example:

```
MSH|^~\&|GRITS|GRITS|||20190128134647-
0500||ACK^V04^ACK|548823|P|2.5.1|||NE|NE|||||Z23^CDCPHINVS
MSA|AE|548823
ERR||PID^1^5^0|101^Required field missing^HL70357|E|6|||MESSAGE REJECTED - REQUIRED
FIELD PID-5-2 MISSING.
```

Patient Administration Message Segment

PID – Patient Identification Segment

The PID segment 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.

SEQ	LEN	DT	R/M	RP/#	TBL#	ELEMENT NAME
1	20	CX	R	Y		**Set ID**
3	20	CX	R	Y	0203	**Patient ID (Internal ID)**
5	48	XPN	R	Y		**Patient Name**
6	48	XPN		Y		Mother's Maiden Name
7	26	TS	R			**Date/Time of Birth**
8	1	IS			0001	Sex
10	80	CE		Y	0005	Race
11	106	XAD		Y		Patient Address
13	40	XTN				Phone number – home
22	80	CE		Y	0189	Ethnic Group
24	1	ID			0136	Multiple Birth Indicator
25	2	NM				Birth Order
29	26	TS				Patient Death Date and Time

Field Notes:

PID-1 Required field and value is "**1**"

PID-3 Components 1 (ID) and 5 (Identifier Type – Medical number or ID) are required in the PID-3 field. When a Provider Organization is sending to GRITS, use the sending system's Patient or Medical Record ID or other identifier if available. When GRITS is sending to an outside system it will use the patient's GRITS ID and Patient or Medical Record ID when it is available.

PID-5 See **Table 0200** and the XPN data type. Last name and first name are required in the first two components. If the Name Type Code component is included, use L-Legal ***NOTE: If patient does not have a first name, "NO FIRST NAME" must be entered. GRITS will not accept records where these fields are blank.*** GRITS does not support repetition of this field.

PID-6 See **Table 0200** the XPN data type. In this context, where the mother's name is used for patient identification, GRITS uses only mother's first name and maiden name. A mother's legal name (not necessarily maiden name) might also appear in the context of an NK1 segment. GRITS does not support repetition of this field.

PID-7 Give the year, month, and day of birth (YYYYMMDD). GRITS ignores any time component submitted when formatted correctly.

PID-8 See **Table 0001**. Use F, M, or U. If segment is empty, GRITS will default to "U". Sending an empty field and value of "U" are highly discouraged.

PID-10 See **Table 0005**. If segment is empty or invalid no value is stored in GRITS and Informational error – {RACE CODE is Required} is included in the Response message. GRITS does not support repetition of this field.

PID-11 See the XAD data type. | Street^PO Box^City^State^Zip^country^^^County|
For example: |123 Main St^PO Box1^Richmond^VA^12345^US^^^Richmond|. GRITS does not support repetition of this field.

PID-13 See the XTN data type. Version 2.5.1 includes the support of the N, X, B and C sequences. GRITS does not support repetition of this field. If PRN is specified in component 2 (telecommunication use code (ID) from **Table 0201**) GRITS will use the 6th, 7th, 8th and 9th components for specification of area code, phone number, extension and text, respectively.

PID-22 See **Table 0189**. If segment is empty or invalid no value is stored in GRITS and Informational error – {ETHNICITY is Required} is included in the Response message. GRITS supports repetition of this field.

PID-24 Use **Y** to indicate that the client was born in a multiple birth. If Y is entered in this field, you must supply the required information in PID-25.

PID-25 Relevant when patient was born in a multiple birth. Use 1 for the first born, 2 for the second, etc. This field is useful in matching patient data to existing records.

Note: You must include Y in PID-24 and indicate the birth order in PID-25 for the birth order to be loaded in all HL7 versions.

PID-29 The date of death, if client is deceased. Provide the year, month, and day of death (YYYYMMDD). GRITS ignores any time component submitted when formatted correctly. If a death date is sent, then the Patient Registry Status in PD1-16 must indicate a value of "**P**" for permanently inactive/deceased.

Example:

```
PID|1||CHRT101^^^^PI^||SMITH^JOHN^JO^JR^^^L^|DOE^JAIN^^^^^M^|20040901|M||2106-
3^WHITE^HL70005^^^|111 My Ave^Apt
B^Atlanta^GA^30303^^H^^GA067^^||^PRN^PH^^^555^4443333|||||||||2186-5^not Hispanic or
Latino^HL70189^^^|||||||
```

PD1-Patient Additional Demographic Segment

The PD1 carries additional patient demographic information that is likely to change.

SEQ	LEN	DT	R/M	RP/#	TBL#	ELEMENT NAME
11	80	CE			0215	Publicity Code
12	1	ID			0136	Protection Indicator
13	8	DT				Protection Indicator effective date
16	1	IS			0441	Immunization registry status
17	8	DT				Immunization registry status effective date
18	8	DT				Publicity Code effective date

Field Notes:

PD1-11 **See Table 0215**. Controls whether recall/reminder notices are sent. GRITS will recognize "**01**" to indicate no recall/reminder notices or "**02**" recall/reminder notices any method. This is a setting users can take advantage of to locate those patients due for a vaccine within the GRITS User Interface. GRITS strongly suggests the value of "**02**" as this can be very beneficial to the patient. Patients will not be automatically contacted by GRITS.

PD1-12 **See Table 0136**. Controls visibility of records to other organizations. Indicates whether or not consent has been given (or assumed) for record sharing. This segment has been modified from the previous HL7 2.3.1 and 2.4 specifications, the meaning of the values has been reversed for HL7 2.5.1.

Y – Protect access to data. Do not allow sharing of information data.
N – Do not protect access to the data. Allow sharing of immunization data.

PD1-12 Segment **HL7 2.3.1 and 2.4 Values / Descriptions**	**PD1-12 Segment** **HL7 2.5.1 Values / Descriptions**
Y (Yes) – Allow sharing of the client information.	**Y** (Yes) – Consent has **NOT** been given for record sharing of client information.
N (No) – Consent has **NOT** been given for sharing client information.	**N** (No) – Allow sharing of client information with other organizations.
Empty "Null" – Default is **Yes**, allow sharing of data.	Empty "Null" – Default is **No**, allow sharing of data.

Note: PD1 Message below shows HL7 2.3.1 and 2.4 vs. 2.5.1 when the PD1-12 (Protection Indicator) segment allows sharing of client information:

Example: Version HL7 **2.3.1** and **2.4** PD1-12 segment

```
PD1||||||||||02 ^Yes reminder/recall - any method^HL70215|Y|20040920|||A|20040920|20040920
```

Example: Version HL7 **2.5.1** with PD1-12 segment

```
PD1||||||||||02 ^Yes reminder/recall - any method^HL70215|N|20040920|||A|20040920|20040920
```

Note: **See Table 0136. (Update message)** GRITS is intended to consolidate immunization data from multiple locations. It cannot allow new information to enter into the registry if "**Y**" is selected for the patient. GRITS strongly encourages "**Y**" to be used rarely so that immunization information can be accessed by all healthcare providers that treat the patient.

PD1-13 Effective date for Protection Indicator reported in PD1-12. Format is YYYYMMDD.

PD1-16 **See Table 0441**. Identifies the registry status of the patient. If a code of **P** is specified, the PID-29 segment must have the Patient Death Date (YYYYMMDD) completed or the record will be rejected.

PD1-17 Effective date for registry status reported in PD1-16. Format is YYYYMMDD.

PD1-18 Effective date for publicity code reported in PD1-11. Format is YYYYMMDD.

NK1 – Next of Kin/Associated Parties 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.

SEQ	LEN	DT	R/M	RP/#	TBL#	ELEMENT NAME
1	4	SI	R			Set ID - NK1
2	48	XPN	CE	Y		Name
3	60	CE	CE		0063	Relationship
4	106	XAD		Y		Address
5	40	XTN		Y		Phone Number

Field Notes:

NK1-1 Sequential numbers. Use "**1**" for the first NK1 within the message, "**2**" for the second, and so forth. Although this field is required by HL7, GRITS will ignore its value, and there is no requirement that the record for the same responsible person keep the same sequence number across multiple messages, in the case that information from the same record is transmitted more than once.

NK1-2 Name of the responsible person who cares for the client. See the XPN data type. GRITS does not support repetition of this field.

NK1-3 Relationship of the responsible person to the patient. See data type CE and **Table 0063** in the HL7 tables. Use the first three components of the CE data type, for example |MTH^Mother^HL70063|.

NK1-4 Responsible person's mailing address. See the XAD data type. GRITS does not support repetition of this field. If responsible person is Mother, the Address that is used in this field will become the patient's address.

NK1-5 Responsible person's phone number. GRITS does not support repetition of this field. If PRN is specified in component 2 (telecommunication use code (ID) from **Table 0201** GRITS will use the 6th, 7th, 8th and 9th components for specification of area code, phone number, extension and text, respectively.

Example:

```
NK1|1|SMITH^JOHN^J^SR|FTH^Father^HL70063^^^|111 My Ave^Apt
B^Atlanta^GA^54321^^H^^GA067^^ |^PRN^PH^^^555^4443333
```

ORC – Order Request Segment

The Order Request Segment is a new segment for GRITS HL7 2.5.1 and needs to be included if submitting to GRITS using version HL7 2.5.1.

Note: The "ordering" mentioned here is not related to ordering for inventory but ordering for person specific administration. Each RXA segment **must** be associated with one ORC, based on HL7 2.5.1 standard.

SEQ	LEN	DT	R/M	RP/#	TBL#	ELEMENT NAME
1	2	IE	R	Y		Order Control
2		EI				Placer Order Number
3		EI	R	Y		Filler Order Number

Field Notes:

ORC-1 Order Control is a required field. Determines the function of the order segment. The value for VXU and RSP message shall be **RE**.

ORC-2 Placer Order Number. The Placer Order Number is used to uniquely identify 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. The sending system may leave this field empty.

ORC-3 Filler Order Number is a required field. The Filler Order Number is used to identify uniquely this order among all orders sent by a provider organization that filled the order.

- This field shall hold a sending system's unique immunization ID. This value is not retained by GRITS.
- In the case where a historic immunization is being recorded, 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**.

Example: `ORC|RE||220123|||||||`

RXA – Pharmacy/Treatment Administration Segment

The RXA carries pharmacy/immunization administration data. It is a repeating segment and can record unlimited numbers of vaccinations.

SEQ	LEN	DT	R/M	RP/#	TBL#	ELEMENT NAME
1	4	NM	R			Give Sub-ID Counter
2	4	NM	R			Administration Sub-ID Counter
3	26	TS	R			Date/Time Start of Administration
4	26	TS	R			Date/Time End of Administration
5	100	CE	R			Administered Code
6	20	NM	R	Y		Administered Amount
7	3	CE		Y		Administered Unit
9	200	CE			NIP001	Administration Notes
11	200	CM				Administered-at location
15	20	ST	RE	Y		Substance Lot Number
16	26	TS				Substance Expiration Date
17	60	CE	RE	Y	0227	Substance Manufacturer Name
21	2	ID			0323	Action code - RXA

Field Notes:

RXA-1 Required by HL7. Use **"0"** for GRITS.

RXA-2 Required by HL7. Use **"1"** for GRITS.

RXA-3 Date the vaccine was given. Format is YYYYMMDD. GRITS ignores any time component.

RXA-4 Required by HL7. Format is YYYYMMDD. Ignored by GRITS, which will use the value in RXA-3.

RXA-5 Identifies the vaccine administered. See the CE data type. GRITS accepts the following vaccine code sets: CVX (CVX Codes), NDC (National Drug Code), C4 (CPT Codes), WVTN (Vaccine Trade Names), and WVGC (Vaccine Group Codes).

- For the CVX code set, provide information in the FIRST TRIPLET of the RXA-5 segment. Provide the identifier (CVX code) in the first component, text description in the second component (optional), and the name of coding system in the third component.

```
CVX example:  |20^DTP/aP^CVX^^^|
```

- If sending multiple code sets, provide the CVX code set in the FIRST TRIPLET, and alternate code set in the SECOND TRIPLET.

```
CVX and NDC example:  |20^DTP/aP^CVX^58160-0810-52^DTp/aP^NDC|
CVX and WVTN example:   |20^DTP/aP^CVX^INFANRIX^DTP/aP^WVTN|
CVX and CPT example:    |20^DTP/aP^CVX ^90700^DTP/aP^C4|
CVX and WVGC example:   |20^DTP/aP^CVX ^DTP/aP^DTP/aP^WVGC|
```

RXA-6 Required by HL7. Quantity of vaccine administered, in milliliters (mL). When quantity is unknown send 999 as the value.

RXA-9 Use **00** to indicate a "New" immunization or **01** to indicate a "Historical" immunization. Sending the immunization as new allows a provider organization to 'own' the immunization and prevents other provider organizations from editing the immunization. For provider organizations set **up to deduct from GRITS inventory via data exchange, 00 is mandatory in this field**. GRITS does not support repetition of this field. See Table **NIP001**, for a full list of acceptable values and descriptions for this field.

If this field is left blank, the immunization will be recorded as *historic* in GRITS.

NOTE: An OBX segment is not **required** for historical immunizations. The OBX-5 segment will contain the immunization eligibility (Financial Class) of vaccine administered. The Eligibility Date will be stored in GRITS based on the immunization vaccination date. The most recent immunization date will be used as the

eligibility Effective Date.

RXA-11 Identifies the site where the vaccine was administered. The site ID and/or site name is entered in component 4. Component 4 is data type HD, so enter the site ID in the first subcomponent and the site name in the second subcomponent. For provider organizations set up to deduct from GRITS inventory via data exchange, if the organization contains more than one site, this field is mandatory.

Example: `|^^^4321&Test Site|`

RXA-15 Manufacturer's lot number for the vaccine. For provider organizations set up to deduct from GRITS inventory via data exchange, when sending a deduction transaction this is a mandatory field. GRITS does not support repetition of this field.

RXA-16 Identifies the expiration date of the medical substance administered. Format is: YYYYMMDD. GRITS ignores any time component. When deducting from inventory within GRITS, this value is useful for locating a matching vaccine lot.

RXA-17 **See Table 0227**. Vaccine manufacturer. The HL7 2.5.1 specification recommends use of the external code set **MVX**. "When using this code system to identify vaccines, the coding system component of the CE field should be valued as "**MVX**" not as "HL70227." GRITS does not support repetition of this field.

Example: |AB^Abbott^MVX^^^|

RXA-21 **See Table 0323**. The Action Code allows an organization to add to or delete records. If it is left empty, then GRITS default to "**A**" for additions. To delete an existing immunization in GRITS, specify a value of "**D**". The immunization can only be deleted if it is owned by the same organization requesting the delete. No more than **5%** of all incoming immunizations in a batch load file can be flagged as delete requests. The total number of delete requests in a single file cannot exceed 50 total.

Note: For updates and additions, organizations shall use "**A**" additions in RXA-21, GRITS determines whether to update the record or add a new immunization.

Here is a sample RXA segment for an update and addition immunization:

```
RXA|0|1|20050919|20050919|10^Polio^CVX^90713^Polio-InJect^C4|1.0|||01^Historical
^^^^^^^^^|||||||||||A|
```

RXR – Pharmacy/Treatment Route Segment

The Pharmacy/Treatment Route Segment contains the alternative combination of route and site.

SEQ	LEN	DT	R/M	RP/#	TBL#	ELEMENT NAME
1	**60**	**CE**	**R**		**0162**	**Route**
2	60	CE			0163	Site

Field Notes:

RXR-1 See **Table 0162.** Route of administration (e.g., intramuscular, oral)

RXR-2 See **Table 0163**. Site of the administration route (e.g., left arm, right thigh).

```
Example:  RXR|IM^INTRAMUSCULAR^HL70162|LA^LEFT ARM^HL70163
```

OBX – Observation/Result Segment

The Observation/Result Segment is used to transmit an observation.

SEQ	LEN	DT	R/M	RP/#	TBL#	ELEMENT NAME
1	4	SI				Set ID-OBX
2	3	ID				Value type
3	**80**	**CE**	**R**			**Observation Identifier**
4	20	ST				Observation sub-ID
5	**65536**	**-**	**R**	**Y**		**Observation Value**
11	**1**	**ID**	**R**		**0085**	**Observation Result Status**
14	26	TS				Date/Time of the observation
17	60	CE			OBMT	Observation Method

Field Notes:

OBX-1 Sequential numbers. Use "**1**" for the first OBX within the message, "**2**" for the second, and so forth.

OBX-2 This field contains the data type which defines the format of the observation value in OBX-5. For incoming Provider to GRITS data, Data Exchange accepts **CE** for Coded Entry. However, for GRITS-Provider, the system will send out values of **CE**, **TS**, **NM** for **Coded Entry**, **Timestamp**, and **Number** respectively, depending on what is actually sent in OBX-5.

OBX-3 This field contains the observation's unique identifier. Organizations send **Logical Identifier Name** and **LOINC Codes**. The **Name of Coding System** in the third component must be **LN** for **LOINC**, First component and second component must report the following:

- **30945-0 Vaccination Contraindication/Precaution**, use **30945-0** in this field and enter a Contraindication, Precaution, or Immunity code (**NIP004**) in OBX-5.

  Example: `OBX|1|CE|30945-0^Contraindication^LN||21^acute illness^NIP^^^|||||F|`

- **31044-1 Reaction to Immunization**, use **31044-1** in this field and enter a Reaction code in OBX-5.

  Example: `OBX|1|CE|31044-1^Reaction^LN||10^Hypotonic^NIP^^^|||||F|`

- **30949-2 Vaccination Adverse Event Outcome (VAERS)**, use **30949-2** in this field and enter an Event Consequence code (**NIP005**) in OBX-5.

  Example: `OBX|1|CE|30949-2^Adverse Outcome^LN||E^er room^NIP^^^|||||F|`

- **64994-7 VFC Eligibility to Immunization**, use **64994-7** in this field and enter a VFC Eligibility code (from the **HL7 0064** table for Financial Class) in OBX-5.

Example:

```
RXA|0|999|20061017|20061017|^^^90748^HepB-Hib^CPT|0|||00^^^^^|||||||||||||
OBX|1|CE|64994-7^Vaccine Eligibility
Code^LN^^^||V05^Underinsured^HL70064||||||F|
```

For Batch HL7 GRITS-Provider, Batch HL7 Bi-directional, Real-time HL7, and Organizational Extract, the system uses this field to send the LOINC Codes for **Recommendations**. For each recommendation, the system sends a grouped set of five OBX segments. Here are the LOINC Codes that the system sends out in OBX-3 for Recommendations.

The LOINC itself is sent in OBX-3 in order to identify what the value in OBX-5 represents.

LOINC Code	Description
30979-9	Vaccines Due Next
30980-7	Date Vaccine Due
30973-2	Vaccine due next dose number
30981-5	Earliest date to give
30982-3	Reason applied by forecast logic to project this vaccine

In the following example, the LOINC Codes are highlighted in OBX-3 for a single recommendation of HepB.

```
OBX|11|CE|30979-9^Vaccines Due Next^LN^^^|3|45^HepB^CVX^90731^HepB^CPT||||||F|
OBX|12|TS|30980-7^Date Vaccine Due^LN^^^|3|20050103||||||F|
OBX|13|NM|30973-2^Vaccine due next dose number^LN^^^|3|1||||||F|
OBX|14|TS|30981-5^Earliest date to give^LN^^^|3|20050103||||||F|
OBX|15|CE|30982-3^Reason applied by forecast logic to project this
vaccine^LN^^^|3|^ACIP schedule||||||F|
```

Please see the end of the OBX Field Notes: for a complete example of how GRITS sends Recommendations.

OBX-4 For sending out Series Information and Recommendations, the number in this field groups together related OBX segments. For example, a single recommendation for DTP/aP is sent in a grouped set of five OBX segments, all with the same sub-identifier in OBX-4. The sub-identifier increments sequentially.

For example, GRITS sends out five grouped OBX segments for each recommendation. The following is a single MMR recommendation, all sharing the same Observation sub-ID of 4 in OBX-4.

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

OBX-5 **See Tables NIP004, NIP005 and HL70064.** Text reporting Contraindication, Precaution, Immunity or Reaction (**NIP004**), or Event Consequence (**NIP005**), and VFC Eligibility (**HL70064**). GRITS has imposed a **CE** data type upon this field. The first component of which is required.

Example: `|23^IG Received^NIP^^^|)`

For Batch HL7 GRITS-Provider, Batch HL7 Bi-directional, Real-time HL7, and Organizational Extract, this field holds the value observed for series information and recommendations. The value corresponds to the LOINC in OBX-3.

For example, for recommendations, the fourth OBX segment is for the Earliest date. OBX-3 contains the code **30979-9&30981-5** and OBX-5 contains the actual earliest date as follows:

```
OBX|4|TS|30979-9&30981-5^Earliest date to give^LN^^^|1|20010519||||||F|
```

Please see the end of the OBX Field Notes: for complete examples of how GRITS sends Series for combination vaccines and Recommendations.

OBX-11 See **Table 0085**. Required for HL7. Use "**F**" for GRITS to indicate final results.

OBX-14 Records the date of the observation. Format is YYYYMMDD. GRITS ignores any time component. OBX-14 is mandatory for contraindications. GRITS ignores the date of Reactions and Adverse Events.

NOTE 1: The only valid OBX Observation Identifier (OBX-03) for an **ADT^A31** message type is Contraindication/Precaution (**30945-0**).

NOTE 2: All OBX messages with an observation identifier of Vaccination Contraindication/Precaution will be

returned in and outgoing file in a separate ADT message for the patient.

NOTE 3: Below you'll find an example of what a recommendation might look like in a RSP message response (see **bold** OBX's below)

For Batch HL7 GRITS-Provider, Batch HL7 Bi-directional, Real-time HL7, and Organizational Extract, a single recommendation is sent in a grouped set of five OBX-segments, which follow a place-holder RXA segment that does not represent any actual immunization administered to the patient. The five OBX segments in order express the Vaccine of the recommendation, the recommended date, the dose of the next vaccine due, the earliest date to give, and the reason for the recommendation, which is always the ACIP schedule.

```
RXA|0|0|20010407|20010407|998^No Vaccine Administered^CVX|999|0
OBX|1|CE|30979-9^Vaccines Due Next^LN^^^|1|20^DTP/aP^CVX^90700^DTP/aP^CPT||||||F|
OBX|2|TS|30980-7^Date Vaccine Due^LN^^^|1|20010607||||||F|
OBX|3|NM|30973-2^Vaccine due next dose number^LN^^^|1|1||||||F|
OBX|4|TS|30981-5^Earliest date to give^LN^^^|1|20010519||||||F|
OBX|5|CE|30982-3^Reason applied by forecast logic to project this
vaccine^LN^^^|1|^ACIP schedule||||||F|
OBX|6|CE|30979-9^Vaccines Due Next^LN^^^|2|85^HepA^CVX^90730^HepA^CPT||||||F|
OBX|7|TS|30980-7^Date Vaccine Due^LN^^^|2|20030407||||||F|
OBX|8|NM|30973-2^Vaccine due next dose number^LN^^^|2|1||||||F|
OBX|9|TS|30981-5^Earliest date to give^LN^^^|2|20020407||||||F|
OBX|10|CE|30982-3^Reason applied by forecast logic to project this
vaccine^LN^^^|2|^ACIP schedule||||||F|
OBX|11|CE|30979-9^Vaccines Due Next^LN^^^|3|45^HepB^CVX^90731^HepB^CPT||||||F|
OBX|12|TS|30980-7^Date Vaccine Due^LN^^^|3|20010407||||||F|
OBX|13|NM|30973-2^Vaccine due next dose number^LN^^^|3|1||||||F|
OBX|14|TS|30981-5^Earliest date to give^LN^^^|3|20010407||||||F|
OBX|15|CE|30982-3^Reason applied by forecast logic to project this
vaccine^LN^^^|3|^ACIP schedule||||||F|
```

1. OBX-17 **See Table OBMT**. For use with Immunity to Varicella Only. This optional field can be used to convey the eligibility status for each immunization administered was captured by vaccine dose or per visit.

2. When Immunity to Varicella is indicated in OBX-5, the Observation Method is mandatory.

   Example of Immunity to Varicella:

   ```
   Immunity: OBX|1|CE|30945-0^Immunity^LN||33^immunity:
   Varicella (chicken pox)^NIP||||||F|||20021010|||HIST^Historical^OBMT
   ```

   Examples of Contraindications, Reactions, and VAERS events:

   ```
   Contraindication:  OBX|1|CE|59784-9^Diseased Immunity (pull 1.5 guide for
list of correct codes) 30945-0^Contraindication^LN||23^IG
                       received^NIP||||||F|||20040920

   Reaction:  OBX|1|CE|31044-1^Reaction^LN||10^Anaphylaxis within 24
              hours^NIP||||||F

   VAERS Event:  OBX|1|CE|30949-2^Vaccine Adverse Event Outcome^LN||L^Life
                 threatening illness^NIP||||||F
   ```

3. The method eligibility status for each immunization administered was captured will be indicated in OBX-17 as follows:

   - If the eligibility is captured by vaccine dose, OBX-17 will be: VXC40^per immunization^CDCPHINVS
   - If the eligibility is captured per visit, OBX-17 will be: VXC41^per visit^CDCPHINVS

   ```
   Example:   OBX|1|CE|64994-7^Vaccine Eligibility
               Code^LN|1|V02^Medicaid^HL70064||||||F||||||VXC40^per
               immunization^CDCPHINVS<CR>
   ```

The QPD and RCP segments are outlined in detail below.

QPD Segment

Query Parameter Definition Segment is used to define a query. The QPD segment defines the parameters of the query. This segment is intentionally very similar to the PID segment containing permanent patient identifying and demographic information that, for the most part, is not likely to change frequently.

SEQ	LEN	DT	R/O	RP/#	TBL#	ELEMENT NAME
1		CE	R	Y	0471	Message Query Name
2	32	ST	R			Query Tag
3		CX	R	Y		Patient Identifier List
4		XPN	R			Patient Name
5		XPN				Mother's Maiden Name
6	26	TS	R			Patient Date of Birth
7	1	IS				Patient Sex
8		XAD				Patient Address
9		XTN				Patient Home Phone Number
10	1	ID				Patient Multiple Birth Indicator
11	2	NM				Patient Birth Order

Field Notes:

QPD-1 **See Table HL70471**. Required field. Use "**Z34**" or "Z44" for GRITS to indicate Message Query Name.

- Use "Z34^Request Complete Immunization History and Forecast^HL7 0471", for a Z34 (QBP) message.
- Use "Z44^Request Evaluated Immunization History and Forecast^HL7 0471", for a Z44 (QBP) message.

QPD-2 Unique to each query message instance.

QPD-3 Component 1 (ID) and 5 (Identifier Type) are required in the QPD-3 field. (See **Table 0203**). When a Provider Organization is sending to GRITS, use the sending system's Chart Number, Medical Record Number or other identifier if available.

QPD-4 This is a required field. See the XPN data type. Last name and first name are required in the first two components. If the Name Type Code component is included, use **L-Legal**.
NOTE: If client does not have a first name, **NO FIRST NAME** must be entered. GRITS does not support repetition of this field.

QPD-5 See the XPN data type. In this context, where the mother's name is used for client identification, GRITS uses only last name and first name. If not valued, Mother's maiden name is not considered when seeking matching clients.

QPD-6 This is a required field, contains the client's date of birth (YYYYMMDD). GRITS ignores any time component submitted when formatted correctly.

QPD-7 This field contains the client's sex. Refer to Use-defined **Table 0001** – Administrative sex for suggested values. Use **F**, **M**, or **U**.

QPD-8 This field contains the address of the client. See XAD data type. GRITS does not support repetition of this field.

QPD-9 This field contains the client's personal phone numbers. Refer to HL7 **Table 0201** – Telecommunication Use Code and HL7 **Table 0202** – Telecommunication Equipment Type for valid values. Ignored by GRITS because phone number is not one of the fields used for client matching.

QPD-10 Use **Y** to indicate that the client was born in a multiple birth.

QPD-11 Relevant when client was born in a multiple birth. Use **1** for the first born, **2** for the second, etc. This field is useful in matching client data to existing records.

Example of Query Message Z34 and Z44:

```
MSH|^~\&||WIRPH||GRITS|20181209173159-
0500||QBP^Q11^QBP_Q11|1|P^|2.5.1^^^^^^^^^^^^|||ER|AL|||||Z34^CDCPHINVS
QPD|Z34^Request Immunization
History^HL70471|HL7251_QUERY_01|123456^^^MYEHR^MR|Child^Bobbie^Q^^^^L|Que^S
uzy^^^^^M|20050512|M|10 East Main St^^Myfaircity^GA^^^L|
RCP|I|5^RD|

MSH|^~\&||WIRPH||GRITS|20181209173159-
0500||QBP^Q11^QBP_Q11|1|P^|2.5.1^^^^^^^^^^^^|||ER|AL|||||Z44^CDCPHINVS
QPD|Z44^Request Immunization
History^HL70471|HL7251_QUERY_01|^^^^SR^~^^^^PI^|check^triple^^^^^^|smith^^^^^^^|20081022|M|
RCP|I|2^RD|
```

This query is being sent from a system with a name space identifier of MYEHR. It is requesting an immunization history for a person named Bobbie Q Child. His mother's maiden name was Suzy Que. He was born 5/12/2005 and lives at 10 East Main St, Myfaircity, Georgia. His medical record number with MYEHR is 123456. The most records that the requesting system wants returned if lower confidence candidates are returned is 5. Processing is expected to be "immediate".

RCP – Response Control Parameter Segment

The Response Control Parameter Segment is required and used to restrict the amount of data that should be returned in response to a query. It lists the segments to be returned. In addition to fields one and two, the CDC IG includes definitions for fields three through seven. This guide does not include definitions for fields three through seven because GRITS does not parse/use those fields.

SEQ	LEN	DT	R/O	RP/#	TBL#	ELEMENT NAME
1	1	ID	O		0091	Query Priority
2		CQ	R		0126	Quantity Limited Request

Field Notes:

RCP-1 See **Table 0091**. This field contains the time frame that the response is expected. Table values and subsequent fields specify time frames for response. Only **I** for immediate shall be used for this field. GRITS defaults to **I** if this field is left empty.

RCP-2 See **Table 0126**. This field contains the maximum length of the response that can be accepted by the requesting system. Valid entries are numerical values 1 through 10 (in the first component) given with the units specified in the second component. GRITS requires **RD** in the second component.

GRITS will return a maximum of 10 records per query message submitted. Zero "0" and any number 11 or greater will result in a maximum of 10 matches returned by GRITS

Note: 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.

```
Example:      RCP|I|10^RD|
```

A provider organization will query a registry to get information on a certain client (i.e. send an HL7 2.5.1 QBP^Q11^QBP_Q11 message) and will receive an HL7 2.5.1Message Response (i.e. RSP^K11^RSP_K11 with one of three response profiles specified in MSH-21, or ACK) to that query in real time.

The RSP^K11_RSP_K11 Response Message will contain the response profile identifier in MSH-21, which will identify the response profile information that will follow in the message.

There are Four Response Profiles (specified in MSH-21):

1. Z31^CDCPHINVS – Multiple candidate list (Analogous to the HL7 2.4 VXX Query response)
2. Z32^CDCPHINVS – Exact candidate match (Analogous to the HL7 2.4 VXR Query response)
3. Z33^CDCPHINVS – No candidate match found in the registry (Analogous to the HL7 2.4 QCK Query response)
4. Z42^CDCPHINVS – Response to Evaluated Immunization History and Forecast Query

There are Four Response Profiles (specified in MSH-21):

1. Z31^CDCPHINVS – Multiple candidate list (Analogous to the HL7 2.4 VXX Query response)

   When GRITS finds multiple patients that match the request, the RSP message displays only demographic information for each possible match. This allows the organization to choose the correct patient based on information like the patient's sex or address. This response can display MSH, MSA, QAK, QPD, PID, PD1, and NK1 segments.

   Note: The person then sends another QBP with the additional demographic information found during review. GRITS should now send a **Z32** response for one patient, which includes the complete immunization history.

2. Z32^CDCPHINVS – Exact candidate match (Analogous to the HL7 2.4 VXR Query response)

   When GRITS finds only one patient that matches the search, the RSP message displays the requested patient's demographic and immunization information. This response can display all segments listed under RSP Response message.

   Note: When available and when a single client is found, GRITS returns the SR State Registry Identifier and the PI

Patient Internal Identifier (entered as any chart number) in the PID-3 Patient Identifier List field.

3. Z33^CDCPHINVS – No candidate match found in the registry (Analogous to the HL7 2.4 QCK Query response)

   When GRITS does not have the patient's record, the RSP message shows that GRITS did not find the record. The Response message displays NF for Not Found in field QAK-2 Query Response Status. This response can display only MSH, MSA, QAK, and QPD segments.

   Note: In batch file processing, GRITS returns only one file. This response file contains the RSP message with the corresponding query, demographic and /or immunization information.

   In real-time processing GRITS sends: a response file and an outbound file. This response file only contains the query information in RSP message form. A separate outbound file relays the demographics and/or immunization history.

4. Z42^CDCPHINVS – Response to Evaluated Immunization History and Forecast Query

   When GRITS finds only one patient that matches the search, the RSP message displays the requested patient's demographic and immunization information. This response can display all segments listed under RSP Response message.

The RSP segments returned depend on how many GRITS records meet the search criteria.

Z31^CDCPHINVS

Response To Vaccination Query (**Returning Multiple PID Matches**) Profile (specified in MSH-21)

MSH	Message Header Segment (One per message)
MSA	Message Acknowledgment Segment (One per message)
QRD	Query Definition Segment (One per message)
QRF	Query Filter Segment (One per message—required by VIIS)
{	
PID	Patient Identification Segment (One per matching client)
[{NK1}]	Next of Kin Segment (Optional, zero or more per matching client)

Z32^CDPHINVS

Response To Vaccination Query Returning the Vaccination Record **(Returning Exact PID Match**)

Profile (specified in MSH-21)

MSH	Message Header Segment (One per message)
MSA	Message Acknowledgment Segment (One per message)
QAK	Query Acknowledgment Segment (One per message)
QPD	Query Parameter Definition Segment (One per message)
PID	Patient Identification Segment (One per matching client)
[PD1]	Additional Demographics
[{NK1}]	Next of Kin Segment (Optional, zero or more per matching client)
{ORC	Order Control
RXA	Pharmacy Administration
[RXR]	Pharmacy Route
[{OBX}]	Observation/Result

Z33^CDCPHINVS

Query General Acknowledgment (**No PID Match Found**)

Profile (specified in MSH-21)

MSH	Message Header Segment (One per message)
MSA	Message Acknowledgment Segment (One per message)
[ERR]	Error
[QAK]	Query Acknowledgment Segment

Z42^CDCPHINVS

Response To Vaccination Query Returning Evaluated

Immunization History and Forecast (**PID Match Found)**

Profile (specified in MSH-21)

MSH	Message Header Segment (One per message)
MSA	Message Acknowledgment Segment (One per message)
[ERR]	Error
[QAK]	Query Acknowledgment Segment
PID	Patient Identification Segment (One per matching client)
[PD1]	Additional Demographics
[{NK1}]	Next of Kin Segment (Optional, zero or more per matching client)
{ORC	Order Control
RXA	Pharmacy Administration
[RXR]	Pharmacy Route
[{OBX}]	Observation/Forecast Result

QAK Segment

The Query Acknowledgment Segment is required and contains information sent in an RSP message. It cannot be repeated.

SEQ	LEN	DT	R/O	RP/#	TBL#	ELEMENT NAME
1	32	ST	O			Query Tag
2	2	ID	R		0208	Query Response Status
3		CE	R			Message Query Name

Field Notes:

QAK-1 Query Tag. Echoes the QPD-2 Query Tag query identifier sent by the Organization requesting information through a QBP message. With this value, GRITS matches the RSP message to the query.

QAK-2 Query Response Status. 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.

QAK-3 Message Query Name. Echoes the QPD-1 Message Query Name sent by the Organization requesting information through a QBP message.

Example: Z33^CDCPHINVS Response profile (No client match found)

```
MSH|^~\&|GRITS|GRITS||WIRPH|20190128154108-0500||RSP^K11^RSP_K11|Test3
NF|P|2.5.1|||NE|NE|||||Z33^CDCPHINVS
MSA|AA|Test3 NF
QAK|Test3 NF|NF|Z34^Request Complete Immunization History^CDCPHINVS|0|10
QPD|Z34^Request Immunization History^HL70471|Test23 NF|Test2^^^^PI|Martxz^Vtrcks||20050101
```

ACK - Acknowledgement Message

Acknowledgment Messages (ACK) are generated for message rejections and for informational error messages. Four conditions that result in entire message rejection are:

1. Sequencing (i.e. a PID segment must follow an MSH segment).
2. Required segment missing.
3. Required field missing from the [1.1] must have exactly one occurrence segment (i.e. a blank MSH-9 field, MSH-9 Message Type is a required field in required segment, without valid data, message cannot be processed).
4. Required field contains invalid data from the must have exactly one occurrence segment.

An ACK is also generated when an informational error message has occurred, but it has not resulted in message rejection (i.e. NK1 segment contains no last name). In this case, the segment is ignored but the remainder of the message is processed. An ACK message is generated with a message informing the sender of the problem. The error message in this case would NOT include “Message Rejected”. The ACK contains the MSH, MSA and ERR segments. The MSH segment is generated according to normal HL7 processing guidelines. The MSA and ERR segments are detailed below:

MSA – Message Acknowledgement Segment

The MSA segment contains information sent while acknowledging another message. MSA-3 through MSA-6 fields are no longer used by GRITS.

SEQ	LEN	DT	R/M	RP/#	TBL#	ELEMENT NAME
1	2	ID	R	Y	0008	Acknowledgment Code
2	199	ST	R	Y		Message Control ID

Field Notes:

MSA-1 Acknowledgement code giving receiver's response to a message. AA (Application Accept) means the message was processed normally. AR (Application Rejection) and AE (Application Error). An informational or error message will be put in ERR-8 for ACK messages the optional ERR segment will be included.

MSA-2 The message control ID from MSH-10 in the message being acknowledged. This allows the sending system to associate this response with the message being responded to.

ERR – Error Segment

The ERR segment is used to add error comments to acknowledgment messages. If a message was rejected for functional reason, this segment will locate the error and described it using locally established codes. ERR-1 is not valid for HL7 2.5.1 processing.

SEQ	LEN	DT	R/M	RP/#	TBL#	ELEMENT NAME
2	80	ERL	RE	Y		Error Location
3		CWE	R		0357	Error Condition Code
4	1	ID	R		0516	Severity
5		CWE	RE		0533	Application Error Code
8		TX	RE			User Message

Field Notes:

ERR-2 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.

ERR-3 Identifies the HL7 (communication) error code. Refer to HL7 Table 0357 – Message Error Condition Codes for valid values.

ERR-4 Identifies the severity of an application error. Knowing if something is Error, Warning or Information is intrinsic to how an application handles the content. Refer to HL7 Table 0516 - Error severity for valid values.

If ERR-3 has a value of "0", ERR-4 will have a value of "I". The Severity code indicates if the system sending the ACK or RSP (with error) is reporting an error that caused significant error loss. For instance the message was rejected or an important segment was rejected (e.g. RXA). This allows the system that initiated the message (VXU or QBP) to alert the user that there were issues with the data sent.

ERR-5 Application specific code identifying the specific error that occurred. Refer to User-defined Table 0533 for appropriate values.

ERR-8 Text of error, informational or warning message displayed to the application user.

Note: If MSA-1 is AA, typically there is not an ERR segment. If it's an AA and there is an HL7 informational message, there will be an ERR segment and all the required fields will be populated.

Or, there may be some instances where the MSA-1 is AA or AE and the informational message, such as inventory was deducted, the only field populated in the ERR segment is ERR-8. ERR-2 through ERR-5 fields will be blank.

Examples:

To illustrate how a GRITS HL7 2.5.1 file is put together, we will show how the fictional Peach Pediatrics formats client and immunization records to transmit to GRITS. The following tables show the information to be transmitted, organized into HL7 segments and fields. For example, PID-3 refers to the third field in the Patient Identification segment. In an HL7 message, each segment is a single text line, ending with the carriage return character. In the examples, long lines are broken artificially for display purposes and <CR> denotes the carriage return character.

Client #1

Information Type	Value to Transmit	HL7 Field
PID segment		
Set ID	1	PID-1
Chart Number for Peach Pediatrics	CHRT101^^^^PI	PID-3
Name	John Jo Smith, Jr.	PID-5
Mother's maiden name	Jain Doe	PID-6
Birth date	September 01, 2004	PID-7
Sex	M	PID-8
PD1 segment		
Publicity Code	02 (immunization reminders allowed)	PD1-11
Protection Indicator	N (client records are visible to other provider organizations)	PD1-12
Protection Indicator effective date	September 13, 2004	PD1-13
Immunization Registry Status	A (client is active in the registry)	PD1-16
Immunization Registry Status eff. date	September 17, 2004	PD1-17
Publicity Code effective date	September 18, 2004	PD1-18
NK1 segment		
Sequential Number	1	NK1-1
Responsible Person Name **#1**	Jain Smith	NK1-2
Relationship to client	Mother (MTH)	NK1-3
Address	111 My Ave Apt B, Atlanta, GA 54321	NK1-4
Phone	(555) 444-3333 ext. 4321	NK1-5
NK1 segment		
Sequential Number	2	NK1-1
Responsible Person Name **#2**	John J. Smith, Sr.	NK1-2
Relationship to client	Father (FTH)	NK1-3

ADT Message (Demographic Update only):

```
MSH|^~\&||PCHPD||GRITS|20150223||ADT^A31^ADT_A05|TEST001|P|2.5.1||||AL<CR>
PID|1||CHRT101^^^^PI^||SMITH^JOHN^JO^JR|DOE^JAIN|20040901|M|||||||||||||Y|2<CR>
PD1||||||||||02^Yes reminder/recall – any
method^HL70215|N|20040913|||A|20040917|20040918
NK1|1|SMITH^JAIN^^|MTH^Mother^HL70063|111 My Ave^Apt B^Atlanta^GA^54321^^H^^GA067
|^PRN^^^^555^4443333^4321^<CR>
NK1|2|SMITH^JOHN^J^SR|FTH^Father^HL70063<CR>
```

In the example above, Peach Pediatrics sends a HL7 version 2.5.1 message to GRITS. The message is not bracketed by the optional file or batch header segments. GRITS will accept HL7 version 2.5.1 messages with or without file and batch header and trailer segments. The message is of type ADT, which is used when sending new or revised client data on an existing GRITS client, but it **DOES NOT** contain immunization information. Client John Jo Smith, Jr. is identified by Peach Pediatrics chart number, CHRT101, in the PID-3 segment. The Social Security Number is also supplied in PID-03. The message could have included John's GRITS ID number in field PID-2, but is not mandatory, as it may not be recorded in Peach Pediatrics' outside system. John's mother's maiden name, birth date, sex, and address also serve to identify him. Some other optional fields are not present, including some fields from the full HL7 standard not defined in this document because they are not used by GRITS. Two NK1 segments provide information on John's mother and father. The father has the minimum required fields listed, while the mother also has her address and telephone.

Response File:

```
MSH|^~\&|GRITS|GRITS||PCHPD|20181231114433-
0500||ACK^V04^ACK|TEST001|P|2.5.1|||NE|NE|||||Z23^CDCPHINVS
MSA|AA|TEST001
```

GRITS answer to the file from the above example with an ACK message. No ERR segment is present and indicates the file processed successfully.

Client #2 & 3

Information Type (Client #2)	Value to Transmit	HL7 Field
PID segment		
Set ID	1	PID-1
Chart Number for Peach Pediatrics	CHRT102^^^^PI	PID-3
Name	Nicole Martxz	PID-5
Mother's maiden name	Kathy Martxz	PID-6
Birth date	April 2, 1993	PID-7
Sex	F	PID-8
PD1 SEGMENT		
Publicity Code	02 (Yes, Reminder/recall – any method)	PD1-11
Protection Indicator	N (Allow Sharing of client information)	PD1-12
Protection Indicator Effective Date	09/13/2004	PD1-13
Immunization Registry Status	A (Active)	PD1-16
ORC segment		
Order Control	'RE' typically entered, but is ignored by GRITS.	ORC-1
Filler Order Number	Is used to identify uniquely this order among all orders sent by a provider organization that filled the order. '219101'	ORC-3
RXA segment #1		
Start/End Date administered	April 01, 1999	RXA-3 and 4
Vaccine	Influenza	RXA-5
CVX Code	16	RXA-5
Administered Amount	999	RXA-6
Administration Notes	Historical (01)	RXA-9
Administered-at location	Test Site	RXA-11
OBX segment		
Set ID-OBX	1 (Sequential numbers. Use "1" for the first OBX within the message, "2" for the second, and so forth.)	OBX-1
Value Type	CE	OBX-2
Observation Identifier	64994-7 (LOINC identifying VFC Eligibility)	OBX-3
Observation Value	V03 (VFC Eligibility code)	OBX-5
Observation Results Status	F	OBX-11
Observation Method	VXC40^per immunization^CDCPHINVS	OBX-17
ORC segment #2		
Order Control #2	RE	ORC-1
Filler Order Number	219102	ORC-3
RXA segment #2		
Start/End Date administered	April 13, 2015	RXA-3 and 4
Vaccine	Polio	RXA-5
CPT Code	90713	RXA-5
Administered Amount	0.5	RXA-6
Administered Units	mL	RXA-7
Administration Notes	New (00)	RXA-9
Administered Location	25003&PEACH Test	RXA-11
Lot number	H-64712	RXA-15
Manufacturer name	Sanofi Pasteur	RXA-17
RXR segment		
Route of Administration	IM (Intramuscular)	RXR-1
Site of Administration	LA (Left Arm)	RXR-3
OBX segment		
Set ID-OBX	2	OBX-1
Value Type	CE	OBX-2
Observation Identifier	64994-7 (LOINC identifying VFC Eligibility)	OBX-3
Observation Value	V02 (Medicaid)	OBX-5
Observation Results Status	F	OBX-11
Observation Method	VXC41^per visit^CDCPHINVS	OBX-17

Information Type (Client #3)	Value to Transmit	HL7 Field
PID segment		
Set ID	1	PID-1
Chart Number for Peach Pediatrics	CHRT103^^^^PT	PID-3
Name	KIRSTIN HOMMIE	PID-5
Mother's maiden name		PID-6
Birth date	May 28, 2000	PID-7
Sex	F	PID-8
ORC segment		
Order Control	RE	ORC-1
Filler Order Number	219104	ORC-3
RXA segment #1		
Date administered	January 31, 2015	RXA-3
Vaccine	HEPB	RXA-5
Administered Amount	0.5	RXA-6
Administration Notes	Historical (01)	RXA-9
OBX segment #3		
Set ID-OBX	3	OBX-1
Value Type	CE	OBX-2
Observation Identifier	64994-7 (LOINC identifying VFC Eligibility)	OBX-3
Observation Value	V00 (Unknown)	OBX-5
Observation Results Status	F	OBX-11
OBX segment #4		
Set ID-OBX	4	OBX-1
Value Type	CE	OBX-2
Reaction to vaccine	31044-1	OBX-3
Type	10 (Anaphylaxis within 24 hours)	OBX-5
Observation Results Status	F	OBX-11

VXU Message – Unsolicited Vaccination Record Update

```
MSH|^~\&||PCHPD||GRITS|20150510||VXU^V04^VXU_V04|T002|P|2.5.1|||ER|AL|<CR>
PID|1||CHRT102^^^^PI^||MARTXZ^NICOLE|MARTXZ^KATHY|19930402|F|<CR>
PD1||||||||||||02^Yes reminder/recall - any method^HL70215|N|20040913|||A|<CR>
ORC|RE||219101|<CR>
RXA|0|1|19990401|19990401|16^INFLUENZA^CVX|999|||01||^^^4321&Test Site|<CR>
OBX|1|CE|64994-7^Eligibility^LN||V03^No Insurance^HL70064|||||F||||||VXC40^Vaccine
Level^CDCPHINVS|<CR>
ORC|RE||219102|<CR>
RXA|0|1|20150413|20150413|10^POLIO^CVX^90713^POLIO^C4|0.5|mL||00||^^^25003&PEACH
TEST||||H-64712||PMC^SANOFI PASTEUR^MVX^^^|<CR>
RXR|IM|LA|<CR>
OBX|2|CE|64994-7^Eligibility^LN||V02^MEDICAID^HL70064||||||F||||||||<CR>
MSH|^~\&||PCHPD||GRITS|20150510||VXU^V04^VXU_V04|T003|P|2.5.1|||ER||<CR>
PID|1||CHRT103^^^^PI^||HOMMIE^KRISTIN||20000528|F|<CR>
ORC|RE||219103|<CR>
RXA|0|1|20000528|20000528|08^HepB^CVX^HEPB^HEPATITIS B ^WVGC|999|||01|<CR>
OBX|3|CE|64994-7^Vaccine Eligibility^LN||V00^UNKNOWN^HL70064||||||F|||||||<CR>
OBX|4|CE|31044-1^Reaction^LN||10^Anaphylaxis within 24 hours^NIP||||||F|<CR>
```

In the example above, Peach Pediatrics sends a batch file of two HL7 messages to GRITS. The messages are bracketed by optional file and batch header segments. The two messages are of type VXU, used for client and immunization updates.

The first client, Nicole Martxz, has two RXA segments. The first immunization is a historical Influenza immunization administered by Test Site. The second immunization is a new immunization administered by Peach Site. A lot number and manufacturer was also specified.

The second client, Kristin Hommie, has one Hepatitis B immunization. The two OBX segments contains the client Eligibility and Reaction of 'Anaphylaxis within 24 hours', which is associated with the immunization.

Response File

```
MSH|^~\&|GRITS2.5.1|GRITS||PCHPD|20150512113428.962||ACK|T002|P|2.5.1
MSA|AR|T002|04132015 Deduct 1.0 x 0.5ml Lot H-64712/Pub/IPOL; 25003-PEACH TEST
MSH|^~\&|GRITS2.5.1|GRITS||PCHPD|20150512113428.971||ACK|T003|P|2.5.1
MSA|AA|T003
```

GRITS answers the file from the above example with a file of ACK messages. No ERR segment are present indicating the files were processed successfully. An MSH segment is created for each message in the batch file – Message control ID T002 and T003. The MSH indicate the IPOL immunization was successfully deducted from inventory.

Client #4

Information Type (Client #4)	Value to Transmit	HL7 Field
PID segment		
Set ID	1	PID-1
Chart Number for Peach Pediatrics	CHRT104^^^^PI	PID-3
Name	SADIE HOMMIE	PID-5
Mother's maiden name	JAIN DOE	PID-6
Birth date	January 1, 2001	PID-7
Sex	F	PID-8
ORC segment		
Order Control	RE	ORC-1
Filler Order Number	219998	ORC-3
RXA segment		
Start/End Date administered	April 30, 2015	RXA-3 and 4
Vaccine	HEPB	RXA-5
Administered Amount	0.5	RXA-6
Administered Unit	mL	RXA-7
Administration Notes	New (00)	RXA-9
Administered Location	25003	RXA-11
Lot Number	ENG001	RXA-15
OBX segment		
Set ID-OBX	1	OBX-1
Value Type	CE	OBX-2
Observation Identifier	64994-7 (LOINC identifying VFC Eligibility)	OBX-3
Observation Value	V00 (Unknown)	OBX-5
Observation Results Status	F	OBX-11

```
MSH|^~\&||PCHPD||GRITS|20150510||VXU^V04^VXU_V04|test004|P|2.5.1|||ER|AL|<CR>
PID|1||CHRT104^^^^PI||HOMMIE^SADIE|DOE^JAIN|20010101|F<CR>
ORC|RE||219998|<CR>
RXA|0|1|20150430|20150430|08^HEPB^CVX^HEPB^HEPATITIS
B^WVGC|0.5|mL||00|||^^^25003|||||ENG001|<CR>
OBX|1|CE|64994-7^Vaccine Eligibility^LN||V00^Unknown^HL70064||||||F|||||||<CR>
```

Response File with Error

A response file for a batch file that did not process normally is listed below. Message control ID test004 contained an invalid eligibility code for the OBX-5 segment (V00) for a new immunizations. The client and immunization were rejected because this was the only immunization on the incoming file. The valid eligibility codes for a new (00) immunization is 01 through 06. See **Table 0064** for the eligibility descriptions.

```
FHS|^~\&|GRITS2.5.1|GRITS||PCHPD|20150227132048.988||2090544.response
BHS|^~\&|GRITS2.5.1|GRITS||PCHPD|20150227132048.988
MSH|^~\&|GRITS2.5.1|GRITS||PCHPD|20150227132048.991||ACK|test004|P|2.5.1
MSA|AA|test004|Client and Immunization Record(s) Rejected. Eligibility code missing or
invalid for a new immunization.
BTS|1
FTS|1
```

In the sample file exchanges above, the outside system initiated the exchange with a file of ADT and VXU segments, and GRITS responded with ACK segments. The format is identical when GRITS sends ADT and VXU segments out, and the ACK responses are similar too. In the FHS, BHS, and MSH segments, the values of the fourth and sixth fields are reversed to show sender and receiver. GRITS always sends its own client identifier in the required field PID-3, and includes the outside system's identifier in PID-3 if known. This provides a firm basis for client identification, makes processing easier for the GRITS system, and avoids errors in storing client information, such as creation of duplicate records when an insufficiently identified client record cannot be matched with a record already in the GRITS database. Though GRITS makes a great effort to match client records effectively, use of the GRITS client ID is the best guarantee of clean and useful data.

QBP Message (Query for Vaccination Record)

Information Type (Client #3)	Value to Transmit	HL7 Field
QRD segment		
Message Query Name	Z34 or Z44	QPD-1
Query Tag	Test 1	QPD-2
Patient Identifier	2	QPD-3
Patient Name	ADULT MARTXZ	QPD-4
Patient Date of Birth	02/05/1990	QPD-5
RCP segment		
Query Priority	I	RCP-1
Quantity Limited Request	10^RD	RCP-2

Query for Exact Match

```
MSH|^~\&|||||20181231173159-
0600||QBP^Q11^QBP_Q11|Test1|P|2.5.1|||ER|AL|||||Z34^CDCPHINVS<CR>
QPD|Z34|Test 1|HEPB^^^^PI^|Martxz^Adult^^^^^L^||19900205|||<CR>
RCP|I|10^RD||<CR>
```

Response File

```
MSH|^~\&|GRITS|GRITS||WIRPH|20190129093954-
0500||RSP^K11^RSP_K11|Test1|P|2.5.1|||NE|NE|||||Z32^CDCPHINVS
MSA|AA|Test1
QAK|Test1|OK|Z34^Request Complete Immunization History^CDCPHINVS|1|10
QPD|Z34|Test 1|HEPB^^^^PI|Martxz^Adult^^^^^L||19900205|||<CR>
PID|1||7581329^^^^SR~HEPB^^^^PI||MARTXZ^ADULT||19900205|F|||||||||||||||N|0
PD1||||||||||||02|N||||A
ORC|RE||78209979
RXA|0|1|20080403|20080403|43^HepB-Adult^CVX^90746^^CPT|1.0|||00||^^^Badger
Clinic||||AD100||SKB
OBX|1|CE|64994-7^Vaccine Eligibility Code^LN||V02^^GRITS||||||F
ORC|RE||0
RXA|0|1|19900205|19900205|998^No Vaccine Administered^CVX|999
OBX|1|CE|30979-9^Vaccines Due Next^LN|1|45^HepB-Unspecified^CVX||||||F
OBX|2|TS|30980-7^Date Vaccine Due^LN|1|20080501||||||F
OBX|3|NM|30973-2^Vaccine due next dose number^LN|1|2||||||F
OBX|4|TS|30981-5^Earliest date to give^LN|1|20080501||||||F
OBX|5|CE|30982-3^Reason applied by forecast logic to project this vaccine^LN|1|ACIP
schedule||||||F
OBX|6|CE|30979-9^Vaccines Due Next^LN|2|88^FLU-Unspecified^CVX||||||F
OBX|7|TS|30980-7^Date Vaccine Due^LN|2|19900805||||||F
OBX|8|NM|30973-2^Vaccine due next dose number^LN|2|1||||||F
OBX|9|TS|30981-5^Earliest date to give^LN|2|19900805||||||F
OBX|10|CE|30982-3^Reason applied by forecast logic to project this vaccine^LN|2|ACIP
schedule||||||F
OBX|11|CE|30979-9^Vaccines Due Next^LN|3|05^Measles^CVX^90705^Measles^C4||||||F
OBX|12|TS|30980-7^Date Vaccine Due^LN|3|19910205||||||F
OBX|13|NM|30973-2^Vaccine due next dose number^LN|3|1||||||F
OBX|14|TS|30981-5^Earliest date to give^LN|3|19910205||||||F
OBX|15|CE|30982-3^Reason applied by forecast logic to project this vaccine^LN|3|ACIP
schedule||||||F
OBX|16|CE|30979-9^Vaccines Due Next^LN|4|07^Mumps^CVX^90704^Mumps^C4||||||F
OBX|17|TS|30980-7^Date Vaccine Due^LN|4|19910205||||||F
OBX|18|NM|30973-2^Vaccine due next dose number^LN|4|1||||||F
OBX|19|TS|30981-5^Earliest date to give^LN|4|19910205||||||F
OBX|20|CE|30982-3^Reason applied by forecast logic to project this vaccine^LN|4|ACIP
schedule||||||F
OBX|21|CE|30979-9^Vaccines Due Next^LN|5|06^Rubella^CVX^90706^Rubella^C4||||||F
OBX|22|TS|30980-7^Date Vaccine Due^LN|5|19910205||||||F
OBX|23|NM|30973-2^Vaccine due next dose number^LN|5|1||||||F
OBX|24|TS|30981-5^Earliest date to give^LN|5|19910205||||||F
OBX|25|CE|30982-3^Reason applied by forecast logic to project this vaccine^LN|5|ACIP
schedule||||||F
```

```
OBX|26|CE|30979-9^Vaccines Due Next^LN|6|09^Td^CVX^90718^Td^C4||||||F
OBX|27|TS|30980-7^Date Vaccine Due^LN|6|19970205||||||F
OBX|28|NM|30973-2^Vaccine due next dose number^LN|6|1||||||F
OBX|29|TS|30981-5^Earliest date to give^LN|6|19970205||||||F
OBX|30|CE|30982-3^Reason applied by forecast logic to project this vaccine^LN|6|ACIP
schedule||||||F
OBX|31|CE|30979-9^Vaccines Due Next^LN|7|115^Tdap^CVX^90715^Tdap^C4||||||F
OBX|32|TS|30980-7^Date Vaccine Due^LN|7|20010205||||||F
OBX|33|NM|30973-2^Vaccine due next dose number^LN|7|1||||||F
OBX|34|TS|30981-5^Earliest date to give^LN|7|19970205||||||F
OBX|35|CE|30982-3^Reason applied by forecast logic to project this vaccine^LN|7|ACIP
schedule||||||F
OBX|36|CE|30979-9^Vaccines Due Next^LN|8|21^Varicella^CVX^90716^Varicella^C4||||||F
OBX|37|TS|30980-7^Date Vaccine Due^LN|8|20030205||||||F
OBX|38|NM|30973-2^Vaccine due next dose number^LN|8|1||||||F
OBX|39|TS|30981-5^Earliest date to give^LN|8|20030205||||||F
OBX|40|CE|30982-3^Reason applied by forecast logic to project this vaccine^LN|8|ACIP
schedule||||||F
```

When a patient has been uniquely identified (there is only one "match" to the query), the RSP response message MSH-21 (**Z32^CDCPHINVS or Z42^CDCPHINVS**) is generated and sent back to the querying organization. GRITS has imposed rules for when a RSP will be sent to the querying organization. Please see the following rules:

1. If the "Allow Sharing of Immunization Data" indicator is set to No (in GRITS) for a client found matching the query, then that client will **NOT** be returned to the requestor unless one of the statement below pertains:
    a. The requestor is the Parent organization of the Child organization owning the data OR;
    b. The organization requesting the query had originally set the "Allow Sharing" indicator to NO.
2. If the client is deceased the client and any immunization data for the client will be returned to the requestor.
3. If the client has opted out of the registry the client will be returned to the requestor but there will **not** be client immunization data returned to the requestor.
4. GRITS will supply all vaccines administered, regardless of validity. GRITS determine validity according to CDC/ACIP schedule.

Query client with duplicate records on file

Information Type (Client #3)	Value to Transmit	HL7 Field
QRD segment		
Message Query Name	Z34 or Z44	QPD-1
Query Tag	Test 2 Dup	QPD-2
Patient Identifier	Test2	QPD-3
Patient Name	Trivia Martxz	QPD-4
Patient Date of Birth	01/01/2005	QPD-5
RCP segment		
Query Priority	I	RCP-1
Quantity Limited Request	10^RD	RCP-2

```
MSH|^~\&|||||20190129||QBP^Q11^QBP_Q11|Test2
Dups|P|2.5.1|||ER|AL|||||Z34^CDCPHINVS<CR>
QPD|Z34|Test2 Dup|Test2^^^^PI^|Martxz^Trivia^^^^^L^||20050101|||<CR>
RCP|I|10^RD|<CR>
```

Response File – Returned duplicate matches and only displays the clients PID and PD1 segments

```
MSH|^~\&|GRITS|GRITS||WIRPH|20190129112102-0600||RSP^K11^RSP_K11|Test2
Dups|P|2.5.1|||NE|NE|||||Z31^CDCPHINVS
MSA|AA|Test2 Dups
QAK|Test2 Dups|OK|Z34^Request Complete Immunization History^CDCPHINVS|2|10
QPD|Z34|Test2 Dup|Test2^^^^PI|Martxz^Trivia^^^^^L||20050101|||<CR>
PID|1||2333171^^^^SR~^^^^PI||MARTXZ^TRIVIA^PRINCETON||20050101|U|||||||||||||||N|0
PD1||||||||||||02|N||||A
PID|1||2299739^^^^SR~^^^^PI||MARTXZ^TRIVIA^S|MARTXZ^MARCIE|20050101|M|||||||||||||||N|0
PD1||||||||||||02|N||||A
```

When a query results in multiple patient matches, the RSP response message MSH-21 (**Z31^CDCPHINVS**) is generated. The RSP message displays only the client' demographic information for each possible match but not their vaccination information. The number of matches that GRITS generates is determined by the value entered in the RCP-2 (Quantity Limited Requested) segment. GRITS will interpret the quantity specified as the maximum number of client MATCHES to be returned via a RSP response message.

Note:

1. GRITS will return a maximum of 10 records per query message submitted. Zero "0" and any number 10 or greater will result in a maximum of 10 matches returned by GRITS.
2. If GRITS matches 10 clients and 2 of those clients have the "Allow Sharing" indicator set to YES, then those 2 clients will be sent back in the RSP message. The remaining 8 clients (Allow Sharing = NO) will not be sent back. GRITS will return multiple PID segment to reflect the total number of matches found in GRITS.

Query for client not in the registry

Information Type (Client #3)	Value to Transmit	HL7 Field
QRD segment		
Message Query Name	Z34	QPD-1
Query Tag	Test3 NF	QPD-2
Patient Identifier	Test3	QPD-3
Patient Name	Vtrcks Martxz	QPD-4
Patient Date of Birth	01/01/2005	QPD-5
RCP segment		
Query Priority	I	RCP-1
Quantity Limited Request	10^RD	RCP-2

+

QBP Message – Z34 Request

MSH|^~\&|||||20190129||QBP^Q11^QBP_Q11|Test3 NF|P|2.5.1|||ER|AL|||||**Z34^CDCPHINVS**<CR>
QPD|Z34|Test3 NF|Test3^^^^PI^|Martxz^Vtrcks^^^^^^||20050101|||<CR>
RCP|I|10^RD||<CR>

Response File – QAK-2 segment is "NF (No client match found)"

MSH|^~\&|GRITS|GRITS||WIRPH|20190129122049-0600||RSP^K11^RSP_K11|Test3
NF|P|2.5.1|||NE|NE|||||**Z33^CDCPHINVS**
MSA|AA|Test3 NF
QAK|Test3 NF|**NF**|Z34^Request Complete Immunization History^CDCPHINVS|0|10
QPD|Z34|Test3 NF|Test3^^^^PI|Martxz^Vtrcks||20050101|||<CR>

QBP Message - Z44 Request

MSH|^~\&||WIRPH||GRITS|20181209173159-0500||QBP^Q11^QBP_Q11|1|P|2.5.1|||ER|AL|||||**Z44^CDCPHINVS**
QPD|Z44^Request Immunization
History^HL70471|HL7251_QUERY_01|3845292^^^^SR^~^^^^PI^|check^happy^^^^^^|smith^^^^^^^|20110705|M||
RCP|I|2^RD|

Response File – QAK-2 segment is "NF (No client match found)"

MSH|^~\&|GRITS|GRITS||WIRPH|20190129123108-0600||RSP^K11^RSP_K11|1|P|2.5.1|||NE|NE|||||**Z33^CDCPHINVS**
MSA|AA|1
QAK|1|**NF**|Z44^Request Complete Immunization History^CDCPHINVS|0|2
QPD|Z44^Request Evaluated Immunization
History^HL70471|HL7251_QUERY_01|3845292^^^^SR~^^^^PI|check^happy|smith|20110705|M

When a query results in a patient not being identified, the RSP response message MSH-21 (**Z33^CDCPHINVS**) is generated. The Response message displayed 'NF' for Not Found in field QAK-2 Query Response Status.

Real-time Processing

"Real-time" processing refers to the ability to transmit an HL7 2.5.1 formatted ADT^A31^ADT_A05 Message (Update Patient Information, Demographic Only), QBP^Q11^QBP_Q11 Message (Query for Vaccination Record) and a VXU^V04^VXU_V04 Message (Unsolicited Vaccination Update) and receive from GRITS the resulting HL7 Response Message in real time.

A provider organization will query a registry to get information on a certain client (i.e. send an HL7 2.5.1 QBP^Q11^QBP_Q11 message) and will receive an HL7 2.5.1Message Response (i.e. RSP^K11^RSP_K11 with one of three response profiles specified in MSH-21, or ACK) to that query in real time.

The RSP^K11_RSP_K11 Response Message will contain the response profile identifier in MSH-21, which will identify the response profile information that will follow in the message.

In order to have this capability, provider organizations need to perform the following:

1. Obtain or develop, install and configure a client interface capable of transmitting an HL7 formatted Message file via the Electronic Business using eXtensible Markup Language (ebXML) infrastructure to securely transmit public healthinformation over the Internet. Currently, there are two acceptable options: a) PHINMS (**P**ublic **H**ealth **I**nformation **N**etwork **M**essaging **S**ystem), or b) the GRITS Web Service, which utilizes the CDC WSDL (Web Service Definition Language).

   a) PHINMS:

   The CDC provides free of charge the PHINMS client Message Sender. This tool can be used to communicate with the PHINMS Message Receiver located on the GRITS server.

   b) **GRITS Web Service:**

   Another method to securely transmit public health information is to use the GRITS Web Service. The GRITS web service is based on the **CDC Web Service Definition Language (WSDL)**. This is a SOAP-based transport methodology for health system-to-health system HL7 immunization messaging interoperability. If you plan to utilize the GRITS Web Service, you do **NOT** need to configure PHINMS. Your web service must be configured to send the appropriate HL7 payload. Although you will not be transmitting information to the CDC, the CDC WSDL is considered a de-facto standard for such interfaces and is the one that GRITS has chosen to utilize.

   If you're interested in using either PHINMS or the GRITS Web Service, please contact the GRITS Business Analyst and ask for the latest version of the Real-Time Interface Client Installation Guide (CIG). Here you will find the specific parameters required to successfully interface with GRITS.

   In the meantime, if you'd like general information about the CDC WSDL please access the CDC website at: http://www.cdc.gov/vaccines/programs/iis/technical-guidance/SOAP/wsdl.html.

   For general information about PHINMS, please access the Public Health Information Network website at: http://www.cdc.gov/phin/

2. The provider organization will submit a text file containing HL7 2.5.1 formatted ADT^A31^ADT_A05, QBP^Q11^QBP_Q11 and VXU^V04^VXU_V04 Messages (up to 100 messages are accepted) to be delivered via their ebXML-based client Message Sender to the GRITS PHINMS Message Receiver or WSDL. GRITS will process the Messages and send back via the PHINMS Message Receiver a file of HL7 2.5.1 formatted Response Messages, one per associated query or vaccination update request.
3. It is the responsibility of the provider organization to obtain or develop, install and configure an ebXML client Message Sender for sending the HL7 2.5.1 formatted Message Requests and receiving the resulting HL7 2.5.1 formatted Message Response file generated by GRITS.
4. The provider organization will need to obtain from GRITS a CPA (Collaboration Protocol Agreement, otherwise known as a Party ID) for access to the GRITS Real-time system.

Full documentation and contact information for the PHINMS product may be found at the following link:
http://www.cdc.gov/phin/

Full documentation for the ebXML specification may be found at the following link:
http://www.ebxml.org/specs
PHINMS is ebXML version 2. 1 compliant.

The following section outlines the various message types that are sent in real-time files.

Real-time files that provider organizations send to the GRITS can contain any of the following message types.

Real-time Process Message Types

ADT^A31	Update Patient Information
MSH	Message Header
PID	Patient Identification
[*PD1]	Patient Additional Demographic
[{NK1}]	Next of Kin/Associated Parties
[{**OBX}]	Observation/Result

* The PD1 segment is required to indicate the client registry status is Inactive, the PD1-16 field must be populated with I – Inactive or P – Permanently Inactive – Deceased,)

**The only OBX segment accepted in an ADT message is a Contraindication. (See OBX – Observation/Result Segment)

VXU^V04^VXU_V04	Unsolicited Vaccination Update
MSH	Message Header
PID	Patient Identification
[PD1]	Patient Additional Demographic
[{NK1}]	Next of Kin / Associated Parties
{ORC	Order Control (One ORC is REQUIRED per RXA segment)
RXA	Pharmacy / Treatment Administration (at least ONE RXA is REQUIRED by GRITS)
[RXR]	Pharmacy / Treatment Route (Only one RXR per RXA segment)
[{OBX}}]	Observation/Result (One OBX is REQUIRED per RXA segment)
QBP^Q11^QBP_Q11	Query for Vaccination Record
MSH	Message Header Segment
QRD	Query Parameter Definition Segment
RCP	Response control Parameter
RSP^K11^RSP_K11	Response To Vaccination Query

Real-time (response) files that the GRITS sends to provider organizations can contain any of the following message Profiles (specified in MSH-21 of the RSP^K11^RSP_K11 Message):

Z32^CDPHINVS Response To Vaccination Query Returning the Vaccination Record (Returning Exact PID Match) Profile (specified in MSH-21)

MSH	Message Header Segment (One per message)
MSA	Message Acknowledgment Segment (One per message)
QAK	Query Acknowledgment Segment (One per message)
QPD	Query Parameter Definition Segment (One per message)
PID	Patient Identification Segment (One per matching client)
[PD1]	Additional Demographics
[{NK1}]	Next of Kin Segment (Optional, zero or more per matching client)
{ORC	Order Control
RXA	Pharmacy ministration
[RXR]	Pharmacy Route
[{OBX}}]	Observation/Result

Z31^CDCPHINVS Response To Vaccination Query (Returning Multiple PID Matches) Profile (specified in MSH-21)

MSH	Message Header Segment (One per message)
MSA	Message Acknowledgment Segment (One per message)
QRD	Query Definition Segment (One per message)
QRF	Query Filter Segment (One per message—required by GRITS)
{ PID	Patient Identification Segment (One per matching client)
[PD1]	Additional Demographics
[{NK1}]	Next of Kin Segment (Optional, zero or more per matching client)}

Z33^CDCPHINVS Query General Acknowledgment (No PID Match Found) Profile (specified in MSH-21)

MSH	Message Header Segment (One per message)
MSA	Message Acknowledgment Segment (One per message)
[ERR]	Error
[QAK]	Query Acknowledgment Segment
QPD	Query Parameter Definition Segment (One per message)

Z42^CDPHINVS Response To Vaccination Query Returning the Evaluated Immunization and Forecast (Returning Exact PID Match) Profile (specified in MSH-21)

MSH	Message Header Segment (One per message)
MSA	Message Acknowledgment Segment (One per message)
QAK	Query Acknowledgment Segment (One per message)
QPD	Query Parameter Definition Segment (One per message)
PID	Patient Identification Segment (One per matching client)
[PD1]	Additional Demographics
[{NK1}]	Next of Kin Segment (Optional, zero or more per matching client)
{ORC	Order Control
RXA	Pharmacy ministration
[RXR]	Pharmacy Route
[{OBX}}]	Observation/Forecast Result

ACK	**General Acknowledgment**
MSH	Message Header Segment
MSA	Message Acknowledgment Segment
[{ERR}]	Error Segment

This document outlines the rules/specifications needed to construct an HL7 message. These same rules must be applied for Real-time message processing. **Note: Batch Message Headers (i.e. FHS, BHS) and footers (i.e. FTS, BTS) are NOT required for Real-time processing.

Real-time Process Message Segments

The message segments below are needed to construct message types that are used by GRITS. Each segment is given a brief description excerpted from the HL7 standard. The tables define what fields make up each segment. Since GRITS does not use all the fields that HL7 defines, there are sometimes gaps in the ordinal sequence of fields. Following HL7 rules, the gaps do not diminish the number of field separators within the segment. For example, if the second and third fields in a segment are not present, their field separators remain in order to indicate that the next field present is the fourth: `field1|||field4`.

MSH Segment
Message Header Segment

For ADT, VXU and QBP message types, the MSH segment must be constructed according to normal HL7 format specifications (refer to Pgs. 2 and 3 of this document). For Real-time processing, GRITS limits the number of MSH segments that can be processed in a single file. Files containing more than 100 MSH segments will be rejected and an ACK message will be generated, informing the provider that 100 is the maximum number of MSH segments that GRITS accepts for Real - time processing.

1. ADT^A31^ADT_V04 (Update Patient Information)
   As stated earlier in this document, the ADT message is used for sending client demographic only updates. This message type can be sent via Real-time. ADT segments should be constructed according to normal HL7 format batch processing specifications listed previously in this document. The ADT message must be received in the HL7 2.5.1 format and GRTIS will validates the version by reading the MSH-12 field. The ADT message must contain |2.5.1^^| in MSH-12.

2. VXU^V04^VXU_V04 (Unsolicited Vaccination Record Update)
   As stated earlier in this document, the VXU message is used for sending client demographic and immunization specific data. This message type can be sent via Real-time. VXU segments should be constructed according to normal HL7 format specifications (refer to pages 5-17 of this document). A VXU message must be received in HL7 2.5.1 format for Real-time processing. GRITS validates the version by reading the MSH-12 field. A VXU message must contain |2.5.1| in MSH-12 for HL7 2.5.1 Querying.

   Immunization deletions can be submitted for both batch HL7 and Real-time submissions. To indicate a deletion, the RXA-21 field must be populated with a value of "**D**". Below is an example of a RXA deletion segment. If the number of deletions received through batch exceeds 5% of the total number of immunizations or more than 50 immunizations are marked for deletion, GRITS will reject the file. Providers are only able to delete immunizations that were entered by their organization.

   ```
   RXA|0|1|19860715|19860715|09^Td^CVX|0|||00^^^^^||^^^208^^^^^^^^^^^^|||||||D|
   ```

   Note: For updates and additions, organizations shall use a value of "**A**" for additions in RXA-21, GRITS has specific criteria for determining whether to update the record or add a new immunization. It is important to not assume updates will be or need to be specifically indicated.

   Here is a sample RXA segment for an update or addition immunization:

   ```
   RXA|0|1|20050919|20050919|09^Td^CVX|999|||01^Historical^^^^^^^^^|||||||||||A|
   ```

3. QBP^Q11_QBP^Q11 (Query for Vaccination Record)
   When a health care provider (participating in an immunization registry) needs to obtain a complete patient vaccination record, a QBP (query) is sent to the immunization registry for the definitive (last updated) immunization record. The three segments that make up a QBP message are the MSH (message header), QPD (query parameter definition). MSH-21 should contain **Z34^CDCPHINVS or Z44^CDCPHINVS** and RCP (Query Response). For a QBP message, the MSH-9 field must contain **|QBP^Q11^QBP_Q11|** and the segments must be in the following sequence order:

   ```
   MSH|^~\&||WIRPH||GRITS|20181209173159-
   0600||QBP^Q11^QBP_Q11|1|P|2.5.1|||ER|AL|||||Z34^CDCPHINVS
   QPD|Z34^Request Immunization
   History^HL70471|HL7251_QUERY_01|3845292^^^^SR^~^^^^PI^|check^happy^^^^^^|smith^^^^^^^|20
   110705|M||
   RCP|I|10^RD|
   ```

   ```
   MSH|^~\&||WIRPH||GRITS|20181209173159-
   0600||QBP^Q11^QBP_Q11|1|P|2.5.1|||ER|AL|||||Z44^CDCPHINVS
   QPD|Z44^Request Immunization
   History^HL70471|HL7251_QUERY_01|3845292^^^^SR^~^^^^PI^|check^happy^^^^^^|smith^^^^^^^|20
   110705|M||
   RCP|I|2^RD|
   ```

Appendix A -- HL7 Data Types

The following descriptions of HL7 data types are excerpted or adapted from the HL7 standard. See the Field Notes: within each segment definition above on how to use data types in particular fields. Some data types have complex definitions much of which do not apply to GRITS usage, and for these we omit much of the HL7 definition of the data type, referring instead to the Field Notes: in the segment definitions.

CE -- Coded Element (most uses)

Components: <identifier (ST)> ^ <text (ST)> ^ <name of coding system (ST)> ^ <alternate identifier (ST)> ^ <alternate text (ST)> ^ <name of alternate coding system (ST)>

Example:
From RXA-5: `|08^HEPB^CVX^ENGERIX-B PEDS^HEPB^WVTN|`

This data type transmits codes and the text associated with the code. To allow all six components of a CE data type to be valued, the maximum length of this data type must be at least 60.

- **Identifier (ST)**

  Sequence of characters (the code) that uniquely identifies the item being referenced by the <text>. Different coding schemes will have different elements here.

- **Text (ST)**

  Name or description of the item in question. E.g., myocardial infarction or X-ray impression. Its data type is string (ST).

- **Name of Coding System (ST)**

  Each coding system is assigned a unique identifier. This component will serve to identify the coding scheme being used in the identifier component. The combination of the **identifier** and **name of coding system** components will be a unique code for a data item. Each system has a unique identifier. ASTM E1238-94, Diagnostic, procedure, observation, drug ID, and health outcomes coding systems are identified in the tables in Section 7.1.4 [of the full HL7 standard], "Coding schemes." Others may be added as needed. When an HL7 table is used for a CE data type, the ***name of coding system*** component is defined as ***HL7nnnn*** where ***nnnn*** is the HL7 table number.

- **Alternate Components**

  These three components are defined analogously to the above for the alternate or local coding system. If the Alternate Text component is absent, and the Alternate Identifier is present, the Alternate Text will be taken to be the same as the Text component. If the Alternate Coding System component is absent, it will be taken to mean the locally defined system.

Note:	The presence of two sets of equivalent codes in this data type is semantically different from a repetition of a CE-type field. With repetition, several distinct codes (with distinct meanings) may be transmitted.

Note:	For HL7-defined tables which have not been adopted from some existing standard, the third component, "name of coding system," is constructed by appending the table number to the string "HL7." Thus, the field *RXR-2-site*, is a CE data type which refers to HL7 table number 0163. Its "name of coding system" component is "HL70163".

CQ – Composite Quantity with Units

This data type carries a quantity and attendant units. Its primary use in here will be for indicating the maximum number of records to return in a query response.
Example:
|10^RD| indicates 10 records.

- **Quantity (NM)**

  Specifies the numeric quantity or amount of an entity.

- **Units (CE)**

  Specifies the units in which the quantity is expressed.

CWE – Coded with Exceptions

Components: <Identifier (ST)> ^ <text (ST) ^ <Name of Coding (ID)> ^ <Alternate Identifier (ST) ^ <Alternate Text (ST) ^ <Name of Alternate (ID)> ^ <Coding System Version ID (ST)> ^ <Alternate Coding System Version ID (ST)> ^ < Original Text (ST)>
Subcomponents of facility (HD): <namespace ID (IS)> & <universal ID (ST)> & <universal ID type (ID)>
Example:
From RXR: |C28161^IM^NCIT^IM^INTRAMUSCULAR^HL71062|

- **Identifier (ST)**

  Sequence of characters (the code) that uniquely identifies the item being referenced by the <text>. Different coding schemes will have different elements here.

- **Text (ST)**

  Name or description of the item in question. E.g., myocardial infarction or X-ray impression. Its data type is string (ST).

- **Name of Coding System (ST)**

  Each coding system is assigned a unique identifier. This component will serve to identify the coding scheme being used in the identifier component. The combination of the **identifier** and **name of coding system** components will be a unique code for a data item. Each system has a unique identifier. ASTM E1238-94, Diagnostic, procedure, observation, drug ID, and health outcomes coding systems are identified in the tables in Section 7.1.4 [of the full HL7 standard], "Coding schemes." Others may be added as needed. When an HL7 table is used for a CE data type, the ***name of coding system*** component is defined as ***HL7nnnn*** where ***nnnn*** is the HL7 table number.

CX – Extended Composite ID with Check Digit

GRITS uses this data type only for client identification in Patient Identification (PID) segments and QPD segments. See the Field Notes: for values used for GRITS.

EI – Entity Identifier

The Entity Identifier (EI) data type defines an entity within a specific series.

The four EI components specify an entity in a series
<entity identifier (ST)>^<namespace ID (IS)>^<universal ID (ST)>^<universal ID type (ID)>)
For example MSH-21: |Z34^CDCPHINVS|

- **Entity Identifier (ST)**
  A unique identifier from a series of identifiers.

- **Namespace ID (IS)**
  A user-defined identifier that specifies the assigning authority responsible for the data.

- **Universal ID (ST)**
  The unique Object Identifier (OID) within the defined Universal ID Type. It must follow the Universal ID Type syntactic rules. If populated, this component should be an OID.

- **Universal ID Type (ID)**
  Controller of Universal ID deciphering. If a Universal ID exists, this element should be the value ISO.

ERL – Error Location

The Error Location (ERL) data type identifies exactly where an error occurred.
The six ERL components specify where an error occurred
<segment ID (ST)>^<segment sequence (NM)>^<field position (NM)>^<field repetition (NM)>^<component number (NM)>^<sub-component number (NM)>
For example, |RXA^1^5^1^3|

- **Segment ID (ST)**
  The three-letter code that names the segment category.

- **Segment Sequence (NM)**
  Identifies the specific instance of the segment where the error occurred. These numbers use 1for the first instance, 2 for the second, and so forth.

- **Field Position (NM)**
  Determines the field number within the segment. These numbers use 1 for the first field, 2 for the second, and so forth. GRITS leaves the field number empty when referring to the entire segment as a whole.

- **Field Repetition (NM)**
  The first instance uses 1. If the Field Position is populated, then GRITS values the Field Repetition.

- **Component Number (NM)**
  Determines the component number within the field. These numbers use 1 for the first component, 2 for the second, and so forth. GRITS leaves the Component Number empty when referring to the entire field as a whole.

- **Sub-Component Number (NM)**
  Determines the Sub-Component number within the component. These numbers use 1 for the first component, 2 for the second, and so forth. GRITS leaves the Component Number empty when referring to the entire field as a whole.

HD -- Hierarchic Designator

The Hierarchic Designator (HD) determines the organization or system responsible for managing or assigning a defined identifier set. GRITS uses this data type only to identify sender and receiver in Message Header (MSH) segments. See the Field Notes: for values used for GRITS.

The three HL components establish the entity responsible for defined identifiers
<namespace ID (IS)>^<universal ID (ST)>^<universal ID type (ID)>

Example For MSH-4: |Sending Facility^^|

ID -- Coded Values for HL7 Defined Tables

The value of such a field follows the formatting rules for a ST field except that it is drawn from a table of legal values. There shall be an HL7 table number associated with ID data types. Examples of ID fields include religion and sex. This data type should be used only for HL7 tables. The reverse is not true, since in some circumstances it is more appropriate to use the CE data type for HL7 tables.

IS -- Coded Values for User Defined Tables

The value of such a field follows the formatting rules for a ST field except that it is drawn from a site-defined (or user-defined) table of legal values. There shall be an HL7 table number associated with IS data types. An example of an IS field is the *Event reason code* defined in Section 3.3.1.4 [of the full HL7 standard], “Event reason code.” This data type should be used only for user-defined tables. The reverse is not true, since in some circumstances, it is more appropriate to use the CE data type for user-defined tables.

LA2 – Location with Address Variation 2

The Location with Address Variation 2 (LA2) specifies a location and its address.

The sixteen LA2 components specify a location
<point of care (IS)> ^ <room (IS) ^ <bed (IS)> ^ <facility (HD) ^ <location status (IS) ^ <patient location type (IS)> ^ <building (IS)> ^ <floor (IS)> ^ < street address (ST)> ^ <other designation (ST)> ^ <city (ST)> ^ <state or province (ST)> ^ <zip or postal code (ST)> ^ <country (ID)> ^ <address type (ID)> ^ <other geographic designation (ST)>
For example, |^^^2345^^^^15^101 MAIN STREET^^METROPOLIS^NE|

MSG – Message Type

This field contains the message type, trigger event, and the message structure ID for the message in MSH-9 Message Type.

The three MSH components define the message type

<message code (ID)>^<trigger event (ID)>^<message structure (ID)>

For example, |VXU^V04^VXU_V04|

NM - Numeric

A number represented as a series of ASCII numeric characters consisting of an optional leading sign (+ or -), the digits and an optional decimal point. In the absence of a sign, the number is assumed to be positive. If there is no decimal point the number is assumed to be an integer. Examples:

```
|999|
|-123.792|
```

Leading zeros, or trailing zeros after a decimal point, are not significant. For example, the following two values with different representations, "01.20" and "1.2", are identical. Except for the optional leading sign (+ or -) and the optional decimal point (.), no non-numeric ASCII characters are allowed. Thus, the value <12 should be encoded as a structured numeric (SN) (preferred) or as a string (ST) (allowed, but not preferred) data type.

SAD – Street Address

The street address (SAD) specifies an entity's street address and associated details.

The three SAD components contain address details
<street or mailing address (ST)>^<street name (ST)>^<dwelling number (ST)>
For example, |747 ABERG^^Albany^NE^68352 |

- **Street or Mailing Address (ST)**
  For a person or institution, states the first line of a street or mailing address.

SI -- Sequence ID

A non-negative integer in the form of a NM field. See the Field Notes: in segments using this data type for specifications of SI fields.

ST -- String Data

String data is left justified with trailing blanks optional. Any displayable (printable) ACSII characters (hexadecimal values between 20 and 7E, inclusive, or ASCII decimal values between 32 and 126), except the defined delimiter characters. Example:

```
|almost any data at all|
```

To include any HL7 delimiter character (except the segment terminator) within a string data field, use the appropriate HL7 escape sequence.

Usage note: the ST data type is intended for short strings (e.g., less than 200 characters). For longer strings the TX or FT data types should be used.

TS_Z -- Time Stamp with Time Zone

```
Format:  YYYY[MM[DD[HHMM[SS[.S[S[S[S]]]]]]]][+/-ZZZZ]^<degree of precision>
```

Contains the exact time of an event, including the date and time. The date portion of a time stamp follows the rules of a date field and the time portion follows the rules of a time field. The specific data representations used in the HL7 encoding rules are compatible with ISO 8824-1987(E).

In prior versions of HL7, an optional second component indicates the degree of precision of the time stamp (Y = year, M = month, D = day, H = hour, M = minute, S = second). This optional second component is retained only for purposes of backward compatibility.

By site-specific agreement, YYYYMMDD[HHMM[SS[.S[S[S[S]]]]]][+/-ZZZZ]^<degree of precision> may be used where backward compatibility must be maintained.

In the current and future versions of HL7, the precision is indicated by limiting the number of digits used, unless the optional second component is present. Thus, YYYY is used to specify a precision of "year," YYYYMM specifies a precision of "month," YYYYMMDD specifies a precision of "day," YYYYMMDDHH is used to specify a precision of "hour," YYYYMMDDHHMM is used to specify a precision of "minute," YYYYMMDDHHMMSS is used to specify a precision of seconds, and YYYYMMDDHHMMSS.SSSS is used to specify a precision of ten thousandths of a second. In each of these cases, the time zone is an optional component. Maximum length of the time stamp is 26. Examples:

`|19760704010159-0600|`	1:01:59 on July 4, 1976 in the Eastern Standard Time zone.
`|19760704010159-0500|`	1:01:59 on July 4, 1976 in the Eastern Daylight Saving Time zone.
`|198807050000|`	Midnight of the night extending from July 4 to July 5, 1988 in the local time zone of the sender.
`|19880705|`	Same as prior example, but precision extends only to the day. Could be used for a birth date, if the time of birth is unknown.

The HL7 Standard strongly recommends that all systems routinely send the time zone offset but does not require it. All HL7 systems are required to accept the time zone offset, but its implementation is application specific. For many applications the time of interest is the local time of the sender. For example, an application in the Eastern Standard Time zone receiving notification of an admission that takes place at 11:00 PM in San Francisco on December 11 would prefer to treat the admission as having occurred on December 11 rather than advancing the date to December 12.

One exception to this rule would be a clinical system that processed patient data collected in a clinic and a nearby hospital that happens to be in a different time zone. Such applications may choose to convert the data to a common representation. Similar concerns apply to the transitions to and from daylight saving time. HL7 supports such requirements by requiring that the time zone information be present when the information is sent. It does not, however, specify which of the treatments discussed here will be applied by the receiving system.

XAD – Extended Address

Components: <street address (ST)> ^ <other designation (ST)> ^ <city (ST)> ^ <state or province (ST)> ^<zip or postal code(ST)> ^ <country (ID)> ^ < address type (ID)> ^ <other geographic designation (ST)>^ <county/parish code (IS)> ^ <census tract (IS)> ^ <address representation code (ID)>

Example:

`|1234 Easy St.^Ste. 123^Allegany^MD^95123^USA^B^^SF^^|`

- **Street Address (SAD)**

  The street or mailing address of a person or institution.

- **Other designation (ST)**

  Second line of address. In general, it qualifies address. Examples: Suite 555 or Fourth Floor.

- **City (ST)**

  City address of a person or institution.

- **State or Province (ST)**

  State or province should be represented by the official postal service codes for that country.

- **Zip or Postal Code (ST)**

  Zip or postal codes should be represented by the official codes for that country. In the US, the zip code takes the form 99999[-9999], while the Canadian postal code takes the form A9A-9A9.

- **Country (ID)**

  Defines the country of the address. See Table 0212.

- **Address Type (ID)**

  Address type is optional.

- **County/Parish Code (IS)**

  A code that represents the county in which the specified address resides. Refer to *user-defined table 0289 - County/parish*. When this component is used to represent the county (or parish), component 8 "other geographic designation" should not duplicate it (i.e., the use of "other geographic designation" to represent the county is allowed only for the purpose of backward compatibility, and should be discouraged in this and future versions of HL7).

XCN -- Extended Composite ID Number and Name for Persons

GRITS uses this data type only to identify Provider Organizations that administer immunizations. See the Field Notes: for segment RXA.

XPN -- Extended Person Name

Components: <family name (ST)> & <last name prefix (ST)> ^ <given name (ST)> ^ <middle initial or name (ST)> ^ <suffix (e.g., JR or III) (ST)> ^ <prefix (e.g., DR) (ST)> ^ <degree (e.g., MD) (ST)> ^ <name type code (ID) > ^ <name representation code (ID)>

Example:

```
|Smith&St^John^J^III^DR^PHD^L|
```

- **Family Name (FN)**

  Usually the last name.

  Note: The Given Name (first name), Family Name (last name), and Second and Further Given Names or Initials thereof cannot contain special characters. GRITS accepts letters; spaces; period (.), hyphen (-), and apostrophe (‘) characters.

- **Given Name (ST)**

  Usually the first name.

- **Second and Further Given Names or Initials Thereof (ST)**

  Usually the middle name or initial, if available. Multiple Second and Further Given Names or Initials thereof may be included by separating them with spaces.

- **Name Type Code (ID)**
  Given information like maiden name, legal name, etc. If the field is empty, GRITS defaults to L for Legal Name.

- **Suffix (ST)**

  Used to specify a name suffix (e.g., Jr. or III).

- **Prefix (ST)**

  Used to specify a name prefix (e.g., Dr.).

- **Degree (ST)**

  Used to specify an educational degree (e.g., MD).

- **Name Type Code (ID)**

  A code that represents the type of name. Refer to *HL7 table 0200 - Name type* for valid values. Table 0200 - Name type. This is not viewable in the User Interface.

Value	Description
A	Alias Name
L	Legal Name
D	Display Name
M	Maiden Name
C	Adopted Name

Note:	The legal name is the same as the current married name.

- **Name Representation Code (ID)**

  This component can be used when names are represented in ideographic or non-alphabetic systems. GRITS ignores this component.

XTN -- Extended Telecommunication Number

```
Components:  [NNN] [(999)]999-9999 [X99999] [B99999] [C any text] ^ <telecommunication use code
(ID)> ^<telecommunication equipment type (ID)> ^ <email address (ST)> ^ <country code (NM)>
^<area/city code (NM)> ^ <phone number (NM)> ^ <extension (NM)> ^ <any text (ST)>
```

Example:

```
(415)555-3210^ORN^FX^
```

[(999)] 999-9999 [X99999] [C any text]

Defined as the TN data type, except that the length of the country access code has been increased to three.

Telecommunication use code (ID)

A code that represents a specific use of a telecommunication number. Refer *to HL7 table 0201 - Telecommunication use code* for valid values.

Table 0201 - Telecommunication use code

Value	Description
PRN	Primary Residence Number
ORN	Other Residence Number
WPN	Work Number
VHN	Vacation Home Number
ASN	Answering Service Number
EMR	Emergency Number
NET	Network (email) Address
BPN	Beeper Number

Telecommunication equipment type (ID)

A code that represents the type of telecommunication equipment. Refer *to HL7 table 0202 - Telecommunication equipment type* for valid values. Table 0202 - Telecommunication equipment type

Value	Description
PH	Telephone
FX	Fax
MD	Modem
CP	Cellular Phone
BP	Beeper
Internet	Internet Address: Use Only If Telecommunication Use Code Is NET
X.400	X.400 email address: Use Only If Telecommunication Use Code Is NET

Email address (ST) Any text (ST)
Country code (NM)
Area/city code (NM)
Phone number (NM)
Extension (NM)

Appendix B -- HL7 Tables

The following tables give valid values for fields in the segments defined above, in the cases where the field definitions reference an HL7 table number. The tables are considered to be part of the HL7 standard, but those tables designated as type User have values determined by GRITS.

Type	Table	Name	Value	Description
HL7	0001	**Sex**	**(used in PID-8)**	
	0001		F	Female
	0001		M	Male
	0001		U	Unknown
HL7	0003	**Event Type**	**(use in MSH09, second component)**	
	0003		A31	ADT/ACK - Update patient information
	0003		K11	RSP- Response to vaccination query
	0003		Q11	QBP – Query for vaccination record
	0003		V04	VXU – Unsolicited vaccination record update
HL7	0005	**Race**	**(use in PID-10)**	
	0005		1002-5	American Indian or Alaska Native
	0005		2028-9	Asian
	0005		2076-8	Native Hawaiian or Other Pacific Islander
	0005		2054-5	Black or African-American
	0005		2106-3	White
	0005		2131-1	Other Race
	0005		Empty	No Value
	0005		U	Unknown
HL7	0008	**Acknowledgment Code**		
	0008		AA	Application Accept
	0008		AE	Application Error
	0008		AR	Application Reject
User	0063	**Relationship**	**(use in NK1-3)**	
	0063		ASC	Associate
	0063		BRO	Brother
	0063		CGV	Care giver
	0063		CHD	Child
	0063		DEP	Handicapped dependent
	0063		DOM	Life partner
	0063		EMC	Emergency contact
	0063		EME	Employee
	0063		EMR	Employer
	0063		EXF	Extended family
	0063		FCH	Foster Child
	0063		FND	Friend
	0063		FTH	Father
	0063		GCH	Grandchild
	0063		GRD	Guardian
	0063		GRP	Grandparent
	0063		MGR	Manager
	0063		MTH	Mother
	0063		NCH	Natural child
	0063		NON	None
	0063		OAD	Other adult

Type	Table	Name	Value	Description
	0063		OTH	Other
	0063		OWN	Owner
	0063		PAR	Parent
	0063		SCH	Stepchild
	0063		SEL	Self
	0063		SIB	Sibling
	0063		SIS	Sister
	0063		SPO	Spouse
	0063		TRA	Trainer
	0063		UNK	Unknown
	0063		WRD	Ward of court
HL7	0064	**Financial class (Eligibility)**	**(use in OBX-5)**	
	0064		V00	Eligibility Not Determined/Unknown ******ONLY VALID ON HISTORICAL IMMUNIZATIONS*
	0064		V01	Insured – Vaccines Covered
	0064		V02	Medicaid
	0064		V03	No Insurance
	0064		V04	American Indian/Alaskan Native
	0064		V05	Insured – No Vaccines/Underinsured
	0064		V06	PeachCare (Note: V06 Code is no longer an approved code for state use. GRITS will continue to accept V06 PeachCare until the system is modified.)
HL7	0076	**Message Type**	**(use in MSH-9, first component)**	
	0076		ACK	General acknowledgment message
	0076		ADT	ADT message
	0076		QBP	Query by Parameter
	0076		QCK	Query general acknowledgment
	0076		RSP	Segment pattern response
	0076		VXU	Unsolicited vaccination record update
HL7	0085	**Observation result status codes**	**(use in OBX-11)**	
	0085		F	Final results
HL7	0103	**Processing ID**		
	0103		P	Production
HL7	0104	**Version ID**	**(use in MSH-12)**	
	0104		2.5.1	Release 2.5.1 2013
HL7	0126	**Quantity Limited Request**	**(use in RCP-2)**	
	0126		1 through 10	Contains the maximum # of matching client records that may be returned in the query
HL7	0136	**Yes/No Indicator**		
	0136		Y	Yes
	0136		N	No
HL7	0155	**Accept/Application Acknowledgment Conditions**	**(use in MSH-15 and 16)**	
	0155		AL	Always
	0155		NE	Never
	0155		ER	Error/Reject conditions only
	0155		SU	Successful completion only
HL7	0162	**Route of Administration**	**(use in RXR-1)**	
	0162		ID	Intradermal
	0162		IM	Intramuscular

Type	Table	Name	Value	Description
	0162		IN	Intranasal
	0162		IV	Intravenous
	0162		PO	Oral
	0162		SC	Subcutaneous
	0162		TD	Transdermal
HL7	0163	**Administrative Site**	**(use in RXR-2)**	
	0163		LT	Left Thigh
	0163		LA	Left Arm
	0163		LD	Left Deltoid
	0163		LG	Left Gluteus Medius
	0163		LVL	Left Vastus Lateralis
	0163		LLFA	Left Lower Forearm
	0163		Nose	Nose
	0163		RA	Right Arm
	0163		RT	Right Thigh
	0163		RVL	Right Vastus Lateralis
	0163		RG	Right Gluteus Medius
	0163		RD	Right Deltoid
	0163		RLFA	Right Lower Forearm
HL7	0189	**Ethnic Group**	**(use in PID-22)**	
	0189		2135-2	Hispanic
	0189		2186-5	Non-Hispanic
	0189		Empty	No Value
	0189		U	Unknown
HL7	0190	**Address type**	**(use in PID-11; NK1-4**	
	0190		H	Home
	0190		O	Office
User	**0200**	**Name type**	**(use in PID-5, 6; NK1-2)**	
	0200		L	Legal name
	0200		M	Maiden name
User	**0201**	**Telecommunication use code**	**(use in PID-13; NK1-5)**	
	0201		PRN	Primary residence number
User	**0202**	**Telecommunication equipment type**	**(use in PID-13; NK1-5)**	
	0202		PH	Telephone
HL7	0203	**Identifier Type**	**(use in PID-2, 3)**	
	0203		MR	Medical Record Number
	0203		PI	Patient Internal Identifier
	0203		PN	Person Number
	0203		PRN	Provider Number
	0203		PT	Patient Number
	0203		SR	State Registry Identifier
HL7	0207	**Processing mode**	**(use in MSH-11, second component)**	
	0207		A	Archive
	0207		R	Restore from archive
	0207		I	Initial load
	0207		T	Current processing, transmitted at intervals (scheduled or on demand)
HL7	0208	**Query response status**	**(find in QAK-2)**	
	0208		NF	Not found
	0208		OK	Data found, no errors
HL7	0212	**Nationality**	**(use in PID-11; NK1-4)**	

Type	Table	Name	Value	Description
	0212		CA	Canada
	0212		US	United States of America
HL7	0215	**Publicity Code**	**(use in PID-11)**	
	0215		01	No reminder/recall
	0215		02	Yes reminder/recall – any method
HL7	0227	**Manufacturers of vaccines (code = MVX)**	**(use in RXA-17)**	
	0227		AB	Abbott Laboratories*(includes Ross Products Division)*
	0227		ACA	Acambis, Inc.
	0227		AD	Adams Laboratories, Inc.
	0227		ALP	Alpha Therapeutic Corporation
	0227		AR	Armour **[Inactive- use AVB]**
	0227		AVB	Aventis Behring L.L.C. *(formerly Centeon L.L.C.; includes Armour Pharmaceutical Company)* **[Inactive – user ZLB]**
	0227		AVI	Aviron
	0227		BA	Baxter Healthcare Corporation **[Inactive- use BAH]**
	0227		BAH	Baxter Heathcare Corporation *(includes Hyland Immuno, Immuno International AG, and North American Vaccine, Inc.)*
	0227		BAY	Bayer *(includes Miles, Inc., and Cutter Laboratories)*
	0227		BN	Bavarian Nordic A/S
	0227		BP	Berna Products **[Inactive- use BPC]**
	0227		BPC	Berna Products Corporation *(includes Swiss Serum And Vaccine Institute Berne)*
	0227		MIP	Emergent BioSolutions *(formerly Michigan Biologic Products Institute And Bioport Corporation)*
	0227		BTP	Biotest Pharmaceuticals Corporation
	0227		CNJ	Cangene Corporation
	0227		CMP	Celltech Medeva Pharmaceuticals **[Inactive- use NOV]**
	0227		CEN	Centeon L.L.C. **[Inactive- use AVB]**
	0227		CHI	Chiron Corporation **[Inactive – use NOV]** *(includes PowderJect Pharmaceuticals, Celltech Medeva Vaccines and Evans Medical Limited)*
	0227		CON	Connaught **[Inactive- use PMC]**
	0227		CSL	CSL Biotherapies, Inc.
	0227		DVC	DynPort Vaccine Company, LLC
	0227		DVX	Dynavax, Inc.
	0227		EVN	Evans Medical Limited **[Inactive- use NOV]**
	0227		GEO	GeoVax Labs, Inc.
	0227		SKB	GlaxoSmithKline *(formerly SmithKline Beecham; includes SmithKline Beecham and Glaxo Wellcome)*
	0227		GRE	Greer Laboratories Inc.
	0227		GRF	Grifols
	0227		IDB	ID Biomedical
	0227		IAG	Immuno International AG **[Inactive- use BAH]**
	0227		IUS	Immuno-U.S., Inc.
	0227		INT	Intercell Biomedical
	0227		JSN	Janssen
	0227		KGC	Korea Green Cross Corporation
	0227		LED	Lederle **[Inactive-use WAL]**
	0227		MBL	Massachusetts Biologic Laboratories *(formerly Massachusetts Public Heath Biologic Laboratories)*
	0227		MA	Massachusetts Public Health Biologic Laboratories **[Inactive-use MBL]**
	0227		MED	MedImmune, LLC
	0227		MOD	Moderna US, Inc.
	0227		MSD	Merck & Co., Inc.

Type	Table	Name	Value	Description
	0227		IM	Merieux **[Inactive-use PMC]**
	0227		MIL	Miles [**Inactive-use BAY]**
	0227		NAB	NABI *(formerly North American Biologicals, Inc.)*
	0227		NYB	New York Blood Center
	0227		NAV	North American Vaccine, Inc. **[Inactive-use BAH]**
	0227		NOV	Novartis Pharmaceutical Corporation *(includes Chiron, Powderject Pharmaceuticals, Celltech Medeva Vaccines and Evans Limited, Ciba-Geigy Limited and Sandoz Limited)*
	0227		NVX	Novavax, Inc.
	0227		OTC	Organon Teknika Corporation
	0227		ORT	Ortho-clinical Diagnostics *(formerly Ortho Diagnostic Systems, Inc.)*
	0227		PAX	PaxVax
	0227		PD	Parkedale Pharmaceuticals *(formerly Parke-Davis)*
	0227		PWJ	Powerject Pharmaceuticals *(includes Celltech Medeva Vaccines and Evans Medical Limited)* **[Inactive- use NOV]**
	0227		PRX	Praxis Biologics **[Inactive- use WAL]**
	0227		PSC	Protein Sciences Corporation
	0227		JPN	Research Foundation for Microbial Diseases of Osaka University (BIKEN)
	0227		PFR	Pfizer, Inc
	0227		PMC	sanofi pasteur *(formerly Aventis Pasteur, Pasteur Merieux Connaught; includes Connaught Laboratories and Pasteur Merieux)*
	0227		SCL	Sclavo, Inc.
	0227		SEQ	Seqirus
	0227		SOL	Solvay Pharmaceuticals
	0227		SI	Swiss Serum and Vaccine Inst. **[Inactive-use BPC]**
	0227		TAL	Talecris Biotherapeutics *(includes Bayer Biologicals)*
	0227		TVA	TEVA Pharmaceuticals USA
	0227		USA	United States Army Medical Research and Material Command
	0227		VBI	VBI Vaccines, Inc
	0227		WA	Wyeth-Ayerst **[Inactive- use WAL]**
	0227		WAL	Wyeth-Ayerst *(includes Wyeth-Lederle Vaccines and Pediatrics, Wyeth Laboratories, Lederle Laboraties, and Praxis Biologics)* [Inactive - use PFR]
	0227		ZLB	ZLB Behring *(includes Aventis Behring and Armour Pharmaceutical Company)*
	0227		OTH	Other manufacturer
	0227		UNK	Unknown manufacturer
HL7	0289	**County/parish (Georgia only)**	**(use in PID-11; NK1-4)**	
	0289		GA001	APPLING
	0289		GA003	ATKINSON
	0289		GA005	BACON
	0289		GA007	BAKER
	0289		GA009	BALDWIN
	0289		GA011	BANKS
	0289		GA013	BARROW
	0289		GA015	BARTOW
	0289		GA017	BEN HILL
	0289		GA019	BERRIEN
	0289		GA021	BIBB
	0289		GA023	BLECKLEY
	0289		GA025	BRANTLEY
	0289		GA027	BROOKS

Type	Table	Name	Value	Description
	0289		GA029	BRYAN
	0289		GA031	BULLOCH
	0289		GA033	BURKE
	0289		GA035	BUTTS
	0289		GA037	CALHOUN
	0289		GA039	CAMDEN
	0289		GA043	CANDLER
	0289		GA045	CARROLL
	0289		GA047	CATOOSA
	0289		GA049	CHARLTON
	0289		GA051	CHATHAM
	0289		GA053	CHATTAHOOCHEE
	0289		GA055	CHATTOOGA
	0289		GA057	CHEROKEE
	0289		GA059	CLARKE
	0289		GA061	CLAY
	0289		GA063	CALYTON
	0289		GA065	CLINCH
	0289		GA067	COBB
	0289		GA069	COFFEE
	0289		GA071	COLQUITT
	0289		GA073	COLUMBIA
	0289		GA075	COOK
	0289		GA077	COWETA
	0289		GA079	CRAWFORD
	0289		GA081	CRISP
	0289		GA083	DADE
	0289		GA085	DAWSON
	0289		GA087	DECATUR
	0289		GA089	DEKALB
	0289		GA091	DODGE
	0289		GA093	DOOLY
	0289		GA095	DOUGHERTY
	0289		GA097	DOUGLAS
	0289		GA099	EARLY
	0289		GA101	ECHOLS
	0289		GA103	EFFINGHAM
	0289		GA105	ELBERT
	0289		GA107	EMANUEL
	0289		GA109	EVANS
	0289		GA111	FANNIN
	0289		GA113	FAYETTE
	0289		GA115	FLOYD
	0289		GA117	FORSYTH
	0289		GA119	FRANKLYN
	0289		GA121	FULTON
	0289		GA123	GILMER
	0289		GA125	GLASCOCK
	0289		GA127	GLYNN

Type	Table	Name	Value	Description
	0289		GA129	GORDON
	0289		GA131	GRADY
	0289		GA133	GREENE
	0289		GA135	GWINNETT
	0289		GA137	HABERSHAM
	0289		GA139	HALL
	0289		GA141	HANCOCK
	0289		GA143	HARALSON
	0289		GA145	HARRIS
	0289		GA147	HART
	0289		GA149	HEARD
	0289		GA151	HENRY
	0289		GA153	HOUSTON
	0289		GA155	IRWIN
	0289		GA157	JACKSON
	0289		GA159	JASPER
	0289		GA161	JEFF DAVIS
	0289		GA163	JEFFERSON
	0289		GA165	JENKINS
	0289		GA167	JOHNSON
	0289		GA169	JONES
	0289		GA171	LAMAR
	0289		GA173	LANIER
	0289		GA175	LAURENS
	0289		GA177	LEE
	0289		GA179	LIBERTY
	0289		GA181	LINCOLN
	0289		GA183	LONG
	0289		GA185	LOWNDES
	0289		GA187	LUMPKIN
	0289		GA189	MCDUFFIE
	0289		GA191	MCINTOSH
	0289		GA193	MACON
	0289		GA195	MADISON
	0289		GA197	MARION
	0289		GA199	MERIWETHER
	0289		GA201	MILLER
	0289		GA205	MITCHELL
	0289		GA207	MONROE
	0289		GA209	MONTGOMERY
	0289		GA211	MORGAN
	0289		GA213	MURRAY
	0289		GA215	MUSCOGEE
	0289		GA217	NEWTON
	0289		GA219	OCONEE
	0289		GA221	OGLETHORPE
	0289		GA223	PAULDING
	0289		GA225	PEACH
	0289		GA227	PICKENS

Type	Table	Name	Value	Description
	0289		GA229	PIERCE
	0289		GA231	PIKE
	0289		GA233	POLK
	0289		GA235	PULASKI
	0289		GA237	PUTNAM
	0289		GA239	QUITMAN
	0289		GA241	RABUN
	0289		GA243	RANDOLPH
	0289		GA245	RICHMOND
	0289		GA247	ROCKDALE
	0289		GA249	SCHLEY
	0289		GA251	SCREVEN
	0289		GA253	SEMINOLE
	0289		GA255	SPALDING
	0289		GA257	STEPHENS
	0289		GA259	STEWART
	0289		GA261	SUMTER
	0289		GA263	TALBOT
	0289		GA265	TALIAFERRO
	0289		GA267	TATTNALL
	0289		GA269	TAYLOR
	0289		GA271	TELFAIR
	0289		GA273	TERRELL
	0289		GA275	THOMAS
	0289		GA277	TIFT
	0289		GA279	TOOMBS
	0289		GA281	TOWNS
	0289		GA283	TREUTLEN
	0289		GA285	TROUP
	0289		GA287	TURNER
	0289		GA289	TWIGGS
	0289		GA291	UNION
	0289		GA293	UPSON
	0289		GA295	WALKER
	0289		GA297	WALTON
	0289		GA299	WARE
	0289		GA301	WARREN
	0289		GA303	WASHINGTON
	0289		GA305	WAYNE
	0289		GA307	WEBSTER
	0289		GA309	WHEELER
	0289		GA311	WHITE
	0289		GA313	WHITFIELD
	0289		GA315	WILCOX
	0289		GA317	WILKES
	0289		GA319	WILKINSON
	0289		GA321	WORTH
HL7	**0292**	**Vaccines Administered (code=CVX)**	**(use in RXA-5)**	

Type	Table	Name	Value	Description
	0292		54	Adenovirus, type 4
	0292		55	Adenovirus, type 7
	0292		143	Adenovirus, T4 and T7, live, oral
	0292		82	Adenovirus-Unspecified
	0292		24	Anthrax
	0292		19	BCG
	0292		174	cholera, live attenuated
	0292		26	cholera, unspecified formulation
	0292		29	CMVIG
	0292		207	COVID-19, mRNA, LNP-S, PF
	0292		208	COVID-19, mRNA, LNP-S, PF, 30 mcg/0.3 mL
	0292		211	COVID-19 vaccine, Subunit, PF, 0.5 mL
	0292		212	COVID-19, vector-nr, rS-Ad26, PF, 0.5 mL
	0292		213	COVID-19, unspecified formulation
	0292		217	COVID-19 mRNA 30 mcg/0.3 mL tris-sucrose
	0292		218	Pfizer COVID-19, mRNA, LNP-S, PF, 10mcg/0.2mL
	0292		219	COVID-19 mRNA 3 mcg/0.2 mL tris-sucrose
	0292		221	COVID-19, mRNA, LNP-S, PF, 50 mcg/0.5 mL
	0292		228	COVID-19, mRNA, LNP-S, PF, ped 25 mcg/0.25 mL
	0292		229	COVID-19 mRNA LNP-S bivalent PF 0.5mL/0.25mL
	0292		300	COVID-19 mRNA LNP-S bivalent PF 0.3mL
	0292		301	COVID-19 mRNA LNP-S bivalent PF 0.2mL
	0292		302	COVID-19, mRNA, LNP-S, bivalent, PF, 3 mcg/0.2 mL dose
	0292		230	COVID-19, mRNA, LNP-S, bivalent booster, PF, 10 mcg/0.2 mL
	0292		28	DT (pediatric)
	0292		20	DTaP
	0292		110	DTaP-HepB-IPV
	0292		120	DTaP-Hib-IPV
	0292		50	DTaP-Hib
	0292		130	DTaP-IPV
	0292		106	DTaP, 5 pertussis antigens
	0292		146	DTaP,IPV,Hib,HepB
	0292		107	DTAP-Unspecified
	0292		309	COVID-19, LNP-S, tris-sucrose, 30 mcg/0.3 mL
	0292		310	COVID-19, mRNA, LNP-S, PF, tris-sucrose, 10 mcg/0.3 mL
	0292		308	COVID-19, mRNA, LNP-S, PF, tris-sucrose, 3 mcg/0.3 mL
	0292		313	COVID-19, subunit, rS-nanoparticle, adjuvanted, PF, 5 mcg/0.5 mL
	0292		312	COVID-19, mRNA, LNP-S, PF, 50 mcg/0.5 mL
	0292		311	COVID-19, mRNA, LNP-S, PF, 25 mcg/0.25 mL
	0292		01	DTP
	0292		22	DTP-Hib
	0292		102	DTP-HIB-HEP B
	0292		88	FLU-Unspecified
	0292		15	FLU, SPLIT
	0292		16	FLU, WHOLE
	0292		111	FLU-LAIV3
	0292		135	FLU, High-Dose
	0292		197	FLU, high-dose, quadrivalent
	0292		140	FLU, injectable, trivalent, pres free
	0292		141	FLU, injectable, trivalent
	0292		144	FLU, intradermal, preservative free
	0292		149	FLU-LAIV4
	0292		150	FLU, injectable, quadrivalent, pres free

Type	Table	Name	Value	Description
	0292		151	FLU-LAIV Unspecified
	0292		153	FLU, injectable, MDCK, pres free
	0292		171	FLU, injectable, MDCK, pres free, quad
	0292		186	FLU, injectable, MDCK, pres, quad
	0292		155	FLU, recombinant, injectable, pres free
	0292		185	FLU, recomb, quad, injectable, pres free
	0292		158	FLU, injectable, quadrivalent
	0292		161	FLU, injectable, quad, pres free 6-35M
	0292		166	FLU, intradermal, quadrivalent, pres free
	0292		205	FLU, quadrivalent, adjuvanted
	0292		168	FLU, trivalent, adjuvanted
	0292		30	HBIG
	0292		52	HepA, adult
	0292		85	Hep A-Unspecified
	0292		83	Hep A, ped/adol, 2 dose
	0292		84	Hep A, ped/adol, 3 dose
	0292		31	Hep A, ped-Unspecified
	0292		104	HepA-HepB
	0292		189	HepB-CpG
	0292		08	Hep B, adolescent or pediatric
	0292		42	Hep B, adolescent/high risk infant
	0292		43	Hep B, adult
	0292		44	Hep B, dialysis
	0292		220	HepB recombinant, 3-antigen, Al(OH)3
	0292		45	Hep B-Unspecified
	0292		47	Hib (HbOC)
	0292		49	Hib (PRP-OMP)
	0292		46	Hib (PRP-D)
	0292		48	Hib (PRP-T)
	0292		148	Hib-MenCY-TT
	0292		17	Hib-Unspecified
	0292		51	Hib-Hep B
	0292		165	HPV9
	0292		118	Human Papillomavirus-bivalent
	0292		62	Human Papillomavirus-quadrivalent
	0292		137	HPV, uncertain formulation
	0292		86	Ig
	0292		14	IG-Unspecified
	0292		87	IGIV
	0292		123	Influenza, H5N1-1203
	0292		160	Influenza A (H5N1), ADJUVANTED-2013
	0292		10	IPV
	0292		39	Japanese Enceph-SC
	0292		134	Japanese Enceph-IM
	0292		66	Lyme disease
	0292		05	Measles
	0292		04	Measles-Rubella
	0292		163	Meningococcal B, OMV
	0292		162	Meningococcal B, recombinant
	0292		164	Meningococcal B, Unspecified
	0292		32	Meningococcal, poly
	0292		103	Meningococcal C conjugate
	0292		114	Meningococcal-MCV4P
	0292		136	Meningococcal-MCV4O

Type	Table	Name	Value	Description
	0292		147	Meningococcal MCV4-Unsp
	0292		108	Meningococcal-Unspecified
	0292		203	meningo poly (A,C,Y,W-135) TT conjugate
	0292		03	MMR
	0292		94	MMRV
	0292		07	Mumps
	0292		127	Novel Influenza-H1N1-09
	0292		128	Novel Influenza-H1N1-09 all formulations
	0292		125	Novel Influenza-H1N1-09, nasal
	0292		126	Novel Influenza-H1N1-09, preserve-free
	0292		02	OPV
	0292		23	Plague
	0292		11	Pertussis
	0292		100	Pneumococcal conjugate 7
	0292		133	Pneumococcal conjugate 13
	0292		215	Pneumo-conjugate 15
	0292		216	Pneumo-conjugate 20
	0292		33	Pneumococcal, poly
	0292		109	Pneumococcal-Unspecified
	0292		89	Polio-Unspecified
	0292		40	Rabies-ID
	0292		18	Rabies-IM
	0292		175	Rabies - IM Diploid cell culture
	0292		176	Rabies - IM fibroblast culture
	0292		90	Rabies-unspecified
	0292		156	Rho(D) IG
	0292		34	RIG
	0292		119	Rotavirus-monovalent, live
	0292		116	Rotavirus-pentavalent, live, oral
	0292		74	Rotavirus-tetravalent, live
	0292		122	Rotavirus-Unspecified
	0292		71	RSV-IGIV
	0292		93	RSV-Mab
	0292		303	RSV, recombinant, adjuvant reconstituted
	0292		305	RSV, bivalent, diluent reconstituted
	0292		306	RSV, mAb, nirsevimab-alip, 0.5 mL, <= 24 mos.
	0292		307	RSV, mAb, nirsevimab-alip, 1.0 mL, <= 24 mos.
	0292		06	Rubella
	0292		38	Rubella-Mumps
	0292		206	smallpox monkeypox vaccine
	0292		139	Td (Adult), Unspecified Formulation
	0292		09	TD (adult)
	0292		113	TD-PF
	0292		115	Tdap
	0292		35	Tetanus toxoid
	0292		112	Tetanus-Unspecified
	0292		13	TIG
	0292		101	Typhoid Vi capsular polysaccharide
	0292		91	Typhoid-Unspecified
	0292		25	Typhoid, oral
	0292		41	Typhoid, parenteral
	0292		53	Typhoid, parenteral, AKD
	0292		75	Vaccinia (Smallpox)
	0292		105	Vaccinia (smallpox), diluted

Type	Table	Name	Value	Description
	0292		79	Vaccinia Immune Globulin- VIG
	0292		21	Varicella
	0292		36	VZIG
	0292		37	Yellow Fever
	0292		183	Yellow Fever vaccine - alt
	0292		184	Yellow Fever, unspecified formulation
	0292		121	Zoster Shingles, (live)
	0292		188	Zoster Subunit
	0292		189	Zoster unspecified formulation
HL7	**0323**	**Action code**	**(use in RXA-21)**	
	0323		A	Add
	0323		D	Delete
	0323		U	Update
HL7	**0354**	Message Structure	(use in MSH-9.3)	
	0354		ACK	ACK
	0354		QBP_Q11	QBP
	0354		RSP_K11	RSP
	0354		VXU_V04	VXU
HL7	**0357**	**Message error status codes**	**(find in ERR-3)**	
	0357		0	Message accepted
	0357		100	Segment sequence error
	0357		101	Required field missing
	0357		102	Data type error
	0357		103	Table value not found
	0357		200	Unsupported Message Type
	0357		201	Unsupported Event Code
	0357		202	Unsupported Processing ID
	0357		203	Unsupported Version ID
	0357		204	Unknown Key Identifier
	0357		205	Duplicate Key Identifier
	0357		206	Application Record Locked
	0357		207	Application Internal Error
HL7	**0441**	**Immunization Registry Status**	**(use in PD1-16)**	
	0441		A	Active
	0441		I	Inactive
	0441		P	Permanently inactive - Deceased
HL7	0471	**Message Query Name**	**(use in QPD-1)**	
	0471		Z34	Request Immunization History
	0471		Z44	Request Evaluated History and Forecast
HL7	**0516**	**Error Severity**	**(use in ERR-4)**	
	0516		I	Informational - Transaction successful, but includes returned information
	0516		W	Warning - Transaction successful, but there may be issues. These may include non-fatal errors with potential for loss of data.
	0516		E	Error - Transaction was not successful. The application rejected data that it views as important. This could include required fields or the entire message. The sender should be alerted to review and correct the message.
HL7	**0533**	**Application Error Code**	**(use in ERR-5.1)**	
	0533		1	Illogical date error - Date conflicts with another date in the message.
	0533		2	Invalid Date - Date is not valid or lacks required precision
	0533		3	Illogical Value error - The value conflicts with other data in the message
	0533		4	Invalid value - The value is not valid. This applies for fields that are not associated with a table of values
	0533		5	Table value not found - The value is not found in the associated table
	0533		6	Required observation missing - A required observation, such as VFC eligibility status, is missing
NIP	NIP001	**Immunization Information Source**	(use in RXA-9)	
	NIP001		00	New Immunization Administered (by Sending Organization)
	NIP001		01	Historical Information - source unspecified

Type	Table	Name	Value	Description
	NIP001		02	Historical information - from other provider
	NIP001		03	Historical information - from parent's written record
	NIP001		04	Historical information - from parent's recall
	NIP001		05	Historical information - from other registry
	NIP001		06	Historical information - from birth certificate
	NIP001		07	Historical information - from school record
	NIP001		08	Historical information - from public agency
NIP	NIP004	**Contraindications, Precautions and Immunities**	**(use in OBX-5)**	
	NIP004		03	Allergy to baker's yeast (anaphylactic)
	NIP004		04	Allergy to egg ingestion (anaphylactic)
	NIP004		05	Allergy to gelatin (anaphylactic)
	NIP004		06	Allergy to neomycin (anaphylactic)
	NIP004		07	Allergy to streptomycin (anaphylactic)
	NIP004		08	Allergy to thimerosal (anaphylactic)
	NIP004		15	Encephalopathy within 7 days of previous dose of DTP
	NIP004		18	Guillain-Barre Syndrome (GBS) within 6 weeks after vaccine containing DTaP/Tdap/TT/DTP/DT
	NIP004		21	Current acute illness, moderate to severe (with or without fever) (e.g. diarrhea, otitis media, vomiting)
	NIP004		22	Chronic illness (e.g. chronic gastrointestinal disease)
	NIP004		23	Immune globulin (IG) administration, recent or simultaneous
	NIP004		26	Serologic immunity: hepatitis B
	NIP004		27	Serologic immunity: measles
	NIP004		28	Serologic immunity: mumps
	NIP004		31	Serologic immunity: rubella
	NIP004		33	Immunity: Varicella (chicken pox)
	NIP004		34	Immunodeficiency (family history)
	NIP004		35	Immunodeficiency (household contact)
	NIP004		36	Immunodeficiency (in recipient) OPV MMR VZU
	NIP004		37	Neurologic disorders, underlying (seizure disorder, CP,DD)
	NIP004		39	Pregnancy (in recipient)
	NIP004		40	Thrombocytopenia
	NIP004		41	Thrombocytopenia purpura (history)
	GRITS		PB	Allergy to POLYMYXIN B
	GRITS		AB	Receipt of anti-body containing products
	GRITS		RB	Client has been exposed to rabies
	GRITS		HA	Serologic immunity: hepatitis A
NIP	**NIP004**	**Reactions**	**(use in OBX-5)**	
	NIP004		10	Anaphylaxis within 24 hours
	NIP004		11	Hypotonic-hyporesponsive collapse within 48 hours
	NIP004		12	Seizure occurring within 3 days
	NIP004		13	Persistent crying lasting >= 3 hours within 48 hours
	NIP004		17	Temperature >= 105 (40.5C) within 48 hours
	NIP005		D	Patient Died
	NIP005		L	Life threatening illness
	NIP005		E	Required emergency room/doctor visit
	NIP005		H	Required hospitalization
	NIP005		P	Resulted in prolongation of hospitalization
	NIP005		J	Resulted in permanent disability
	GRITS		*G1*	*Unspecified Reaction indicated on file*

Type	Table	Name	Value	Description
LN				
	LOINC		30979-9	Vaccines Due Next
	LOINC		30980-7	Date Vaccine Due
	LOINC		30973-2	Vaccine due next dose number
	LOINC		30981-5	Earliest date to give
	LOINC		30982-3	Reason applied by forecast logic to project this vaccine
	LOINC		64994-7	Reason applied by forecast logic to project this vaccine
NIP	NIP006	**Patient Registry Status**	**(use in PDI-16)**	
	NIP006		A	Active
	NIP006		N	Inactive
	NIP006		P	Permanently inactive – deceased
	NIP006		M	Moved or Gone Elsewhere
	NIP006		Null	Active
GRITS	**OBMT**	**Observation method**	**(use in OBX-17)**	
	OBMT		DIAG	Diagnosed
	OBMT		HIST	Historical
	OBMT		SERO	Serologic
GRITS	WVGC	**Vaccine Group Code (WVGC)**	**(use in RXA-5)**	
	WVGC		Adeno	Adeno
	WVGC		Anthrax	Anthrax
	WVGC		BCG	BCG
	WVGC		Cholera	Cholera
	WVGC		COVID-19	Coronavirus
	WVGC		Diphtheria	Diphtheria Antitoxin
	WVGC		DTP/aP	Diphtheria, Tetanus, Acellular Pertussis
	WVGC		Encephalitis	Encephalitis
	WVGC		Flu H1N1-09	Novel Influenza-09
	WVGC		H5N1 flu	H5N1 flu
	WVGC		HBIG	HBIG
	WVGC		HepA	Hepatitis A
	WVGC		HepB	Hepatitis B
	WVGC		Hib	Hib
	WVGC		HPV	Human Papilloma Virus
	WVGC		HZ	Zoster
	WVGC		Ig	Ig
	WVGC		IG-RSV IgIM	IG-RSV IgIM
	WVGC		Influenza	Influenza
	WVGC		Lyme	Lyme
	WVGC		Measles	Measles Virus Vaccine
	WVGC		MMR	Measles, Mumps, Rubella
	WVGC		Meningo	Meningococcal
	WVGC		Meningococcal B	MeningB
	WVGC		Mumps	Mumps Virus Vaccine
	WVGC		Plague	Plague
	WVGC		Pneumococcal	Pneumonia Conjugate
	WVGC		Pneumo-Poly or PPV	Pneumonia Polysaccharide
	WVGC		Polio	Poliomyelitis
	WVGC		Priorix	Measles, Mumps, Rubella
	WVGC		Rabies	Rabies
	WVGC		Rotavirus	Rotavirus

Type	Table	Name	Value	Description
	WVGC		Rubella	Rubella Virus Vaccine
	WVGC		Tetanus	Tetanus
	WVGC		Td	Tetanus Diphtheria
	WVGC		Tdap	Tetanus, Diphtheria, Acellular Pertussis
	WVGC		Typhoid	Typhoid
	WVGC		Smallpox	Vaccinia
	WVGC		Varicella	Varicella
	WVGC		Yellow Fever	Yellow Fever
GRITS	WVTN	**Vaccine Trade Name (WVTN)**	**(use in RXA-5)**	
	WVTN		ABRYSVO	RSV, bivalent, diluent reconstituted
	WVTN		ACAM2000	Vaccinia (Smallpox)
	WVTN		Acel-Imune	DTaP
	WVTN		ActHib	Hib-PRP-T
	WVTN		ADACEL	TdaP > 7 years
	WVTN		Adeno T4	Adeno T4
	WVTN		Adeno T7	Adeno T7
	WVTN		Adenovirus T4 and T7	Adenovirus, T4 and T7, live, oral
	WVTN		AFLURIA (IIV4)	FLU, injectable, quadrivalent
	WVTN		AFLURIA PF (IIV4)	FLU, injectable, quadrivalent, pres free
	WVTN		Afluria-PF 6-35M (IIV4)	FLU, injectable, quad, pres free 6-35M
	WVTN		Arexvy	RSV, recombinant, adjuvant reconstituted
	WVTN		Attenuvax	Measles
	WVTN		BayGam	HepA-Ig
	WVTN		BayHep B	HBIG
	WVTN		BayHep B-Peds	HBIG
	WVTN		BayRab	RIg
	WVTN		BayTet	TIg
	WVTN		BCG-Cancer	BCG-BC
	WVTN		BCG-TB	BCG-TB
	WVTN		BEXSERO	Meningococcal B, OMV
	WVTN		BEYFORTUS 0.5 mL	RSV, mAb, nirsevimab-alip, 0.5 mL, <= 24 mos.
	WVTN		BEYFORTUS 1.0 mL	RSV, mAb, nirsevimab-alip, 1.0 mL, <= 24 mos.
	WVTN		Biavax II	Rubella-Mumps
	WVTN		BioThrax	Anthrax
	WVTN		BOOSTRIX	Tdap> 7 years
	WVTN		Certiva	DTaP
	WVTN		Cervarix	Human Papillomavirus-bivalent
	WVTN		Cholera-I	Cholera-Inject (Inactive)
	WVTN		Cholera-O	Cholera-Oral (Inactive)
	WVTN		CMV-IgIV	CMV-IgIV
	WVTN		Comvax	HepB-Hib
	WVTN		Moderna COVID-19 Ped 6M-5Y	COVID-19, mRNA, LNP-S, PF, ped 25 mcg/0.25 mL
	WVTN		Moderna COVID-19 Vaccine	COVID-19, mRNA, LNP-S, PF
	WVTN		SPIKEVAX	COVID-19, mRNA, LNP-S, PF
	WVTN		Moderna COVID-19 Booster	COVID-19, mRNA, LNP-S, PF, 50 mcg/0.5 mL
	WVTN		Moderna COVID-19 Vaccine Bivalent Booster	COVID-19 mRNA LNP-S bivalent PF 0.5mL/0.25mL
	WVTN		Pfizer-BioNTech COVID-19 Vaccine	COVID-19, mRNA, LNP-S, PF, 30 mcg/0.3 mL
	WVTN		Pfizer COVID-19 tris-sucrose	COVID-19 mRNA 3 mcg/0.2 mL tris-sucrose

Type	Table	Name	Value	Description
			Age < 5Y	
	WVTN		Pfizer COVID-19 Ped 5-11	Pfizer COVID-19, mRNA, LNP-S, PF, 10mcg/0.2mL
	WVTN		Pfizer COVID-19 tris-sucrose Age 12+	COVID-19 mRNA 30 mcg/0.3 mL tris-sucrose
	WVTN		COMIRNATY	COVID-19 mRNA 30 mcg/0.3 mL tris-sucrose
	WVTN		Pfizer COVID-19 Bivalent Booster 12+	COVID-19 mRNA LNP-S bivalent PF 0.3mL
	WVTN		Pfizer COVID-19 Bivalent Booster 5-11	COVID-19 mRNA LNP-S bivalent PF 0.2mL
	WVTN		Janssen COVID-19 Vaccine	COVID-19, vector-nr, rS-Ad26, PF, 0.5 mL
	WVTN		Pfizer COVID-19 Ped Bivalent 6M-4Y	COVID-19, mRNA, LNP-S, bivalent, PF, 3 mcg/0.2 mL dose
	WVTN		Moderna COVID-19 Ped Bivalent 6M-5Y	COVID-19, mRNA, LNP-S, bivalent booster, PF, 10 mcg/0.2 mL
	WVTN		JYNNEOS	smallpox monkeypox vaccine
	WVTN		COMIRNATY (2023-2024)	COVID-19, LNP-S, tris-sucrose, 30 mcg/0.3 mL
	WVTN		Pfizer-BioNTech C19 (2023-2024) 5 yrs to < 12 yrs	COVID-19, mRNA, LNP-S, PF, tris-sucrose, 10 mcg/0.3 mL
	WVTN		Pfizer-BioNTech C19 (2023-2024) 6M to < 5 yrs	COVID-19, mRNA, LNP-S, PF, tris-sucrose, 3 mcg/0.3 mL
	WVTN		Novavax C19 Vaccine (2023-2024) 12yrs+	COVID-19, subunit, rS-nanoparticle, adjuvanted, PF, 5 mcg/0.5 mL
	WVTN		Spikevax 12+	COVID-19, mRNA, LNP-S, PF, 50 mcg/0.5 mL
	WVTN		Moderna C19 Vaccine 6M-11Y	COVID-19, mRNA, LNP-S, PF, 25 mcg/0.25 mL
	WVTN		DAPTACEL	DTaP,5 pertussis antigens
	WVTN		DECAVAC	Td Pres-Free
	WVTN		Diphtheria	Diphtheria
	WVTN		Dryvax	Smallpox
	WVTN		DT	DT-Peds
	WVTN		DTP	DTP
	WVTN		Engerix-B Adult	HepB-Adult
	WVTN		Engerix-B dialysis	HepB-Dialysis 4 dose
	WVTN		Engerix-B Peds	HepB-Peds
	WVTN		AFLURIA (IIV3)	FLU, injectable, trivalent
	WVTN		AFLURIA-PF (IIV3)	FLU, injectable, trivalent, pres free
	WVTN		Flu-Imune 6-35 Months	FLU, injectable, trivalent
	WVTN		Flu-Imune > 12 Years	FLU, WHOLE
	WVTN		Flu-Imune > 3 Years	FLU, injectable, trivalent
	WVTN		Flu-Shield 6-35 Months	FLU, injectable, trivalent
	WVTN		Flu-Shield > 12 Years	FLU, WHOLE
	WVTN		Flu-Shield > 3 Years	FLU, injectable, trivalent
	WVTN		Fluad	Flu, trivalent, adjuvanted
	WVTN		FLUAD Quadrivalent	Flu, quadrivalent, adjuvanted
	WVTN		Fluarix-PF (IIV4)	FLU, injectable, quadrivalent, pres free (Min Age 6 Months; previously 3 Years)
	WVTN		Fluarix-PF (IIV3)	FLU, injectable, trivalent, pres free
	WVTN		Flublok	FLU, recombinant, injectable, pres free
	WVTN		Flublok quadrivalent	FLU, recomb, quad, injectable, pres free
	WVTN		Flucelvax (ccIIV3)	FLU, injectable, MDCK, pres free
	WVTN		Flucelvax (ccIIV4)	FLU, injectable, MDCK, pres free, quad
	WVTN		Flucelvax Quad With Preservative	FLU, injectable, MDCK, quadrivalent, preservative
	WVTN		FluLaval > 3Y (IIV3)	FLU, injectable, trivalent
	WVTN		FluLaval-PF > 3Y (IIV3)	FLU, injectable, trivalent, pres free
	WVTN		FluLaval > 6M (IIV4)	FLU, injectable, quadrivalent

Type	Table	Name	Value	Description
	WVTN		FluLaval-PF > 6M (IIV4)	FLU, injectable, quadrivalent, pres free
	WVTN		FluMist (LAIV3)	FLU-LAIV3
	WVTN		FluMist (LAIV4)	FLU-LAIV4
	WVTN		Fluogen 6-35 Months	FLU, injectable, trivalent
	WVTN		Fluogen > 12 Years	FLU, WHOLE
	WVTN		Fluogen > 3 Years	FLU, injectable, trivalent
	WVTN		Fluvirin 6-35 Months	FLU, injectable, trivalent
	WVTN		Fluvirin > 12 Years	FLU, WHOLE
	WVTN		Fluvirin > 3 Years	FLU, injectable, trivalent
	WVTN		Fluvirin > 4 Years	FLU, injectable, trivalent
	WVTN		Fluvirin-PF > 4 Years	FLU, injectable, trivalent, pres free
	WVTN		Fluzone > 12 Years	FLU, WHOLE
	WVTN		Fluzone > 3 Years	FLU, injectable, trivalent
	WVTN		Fluzone > 6M (IIV3)	FLU, injectable, trivalent
	WVTN		Fluzone > 6M (IIV4)	FLU, injectable, quadrivalent
	WVTN		Fluzone-PF 6-35M (IIV3)	FLU, injectable, trivalent, pres free
	WVTN		Fluzone-PF 6-35M (IIV4)	FLU, injectable, quad, pres free 6-35M
	WVTN		Fluzone-PF > 3Y (IIV3)	FLU, injectable, trivalent, pres free
	WVTN		Fluzone-PF > 3Y (IIV4)	FLU, injectable, quadrivalent, pres free
	WVTN		Fluzone-PF > 6M (IIV4)	FLU, injectable, quadrivalent, pres free
	WVTN		Fluzone High-Dose	FLU, High-Dose
	WVTN		Fluzone, High-Dose Quad	FLU, high-dose, quadrivalent
	WVTN		Fluzone Intradermal	FLU, intradermal, preservative free
	WVTN		GamaSTAN	Immune Globulin
	WVTN		Gardasil	HPV, Quadrivalent
	WVTN		GARDASIL 9	HPV9
	WVTN		H1N1 FluMist	Novel Influenza-H1N1-09, nasal
	WVTN		H1N1 Afluria-PF	Novel Influenza-H1N1-09, preserve-free
	WVTN		H1N1 Fluvirin-PF > 4Y	Novel Influenza-H1N1-09, preserve-free
	WVTN		H1N1 Fluzone-PF 6-35M	Novel Influenza-H1N1-09, preserve-free
	WVTN		H1N1 Fluzone-PF > 3Y	Novel Influenza-H1N1-09, preserve-free
	WVTN		H1N1 Afluria	Novel Influenza-H1N1-09
	WVTN		H1N1 Fluvirin > 4Y	Novel Influenza-H1N1-09
	WVTN		H1N1 Fluzone > 6M	Novel Influenza-H1N1-09
	WVTN		Havrix Adult	HepA Adult
	WVTN		Havrix Peds 2 Dose	Hep A Ped 2 Dose
	WVTN		{inactive} Havrix Peds 3 Dose	HepA Ped 3 Dose
	WVTN		HBlg	HBIG
	WVTN		HepaGam B	HBIG
	WVTN		Heplisav-B	HepB-CpG
	WVTN		Hib-TITER	Hib-HbOC
	WVTN		Hiberix	Hib-PRP-T
	WVTN		HyperHEP B	HBIG
	WVTN		Hyper-TET	Tlg
	WVTN		Ig	Ig
	WVTN		IgIV	IgIV
	WVTN		Imogam Rabies-HT	RIg-HT
	WVTN		IMOVAX	Rabies - IM Diploid cell culture
	WVTN		IMOVAX ID	Rabies-ID

Type	Table	Name	Value	Description
	WVTN		Infanrix	DTaP
	WVTN		Influenza A (H5N1)-2013	Influenza A (H5N1), ADJUVANTED-2013
	WVTN		IPOL	Polio-Inject
	WVTN		Ixiaro	Japanese Enceph-IM
	WVTN		JE-Vax	Japanese Enceph-SC
	WVTN		KINRIX	DTaP-IPV
	WVTN		LYMErix	Lyme
	WVTN		Measles	Measles
	WVTN		Measles-Rubella (MERU)	Measles-Rubella
	WVTN		Menactra	Meningococcal-MCV4P
	WVTN		Menhibrix	Meningococcal C/Y-HIB PRP
	WVTN		MENOMUNE	Meningococcal-Polysaccharide
	WVTN		Menveo	Meningococcal-MCV4O
	WVTN		MenQuadfi	meningo poly (A,C,Y,W-135) TT conjugate
	WVTN		Meruvax II	Rubella
	WVTN		MICRhoGAM	Rho(D) Ig mini-dose
	WVTN		MMR II	MMR
	WVTN		M-R-VAX	Measles-Rubella
	WVTN		Mumps	Mumps
	WVTN		Mumps-Rubella (MURU)	Rubella-Mumps
	WVTN		Mumpsvax	Mumps
	WVTN		Novavax COVID-19 Vaccine	COVID-19 vaccine, Subunit, PF, 0.5 mL
	WVTN		Nabi-HB	HBIg
	WVTN		OmniHib	Hib-PRP-T
	WVTN		ORIMUNE	Polio-Oral
	WVTN		Pediarix	DTaP-Hep B-IPV
	WVTN		PedvaxHIB	Hib-OMP
	WVTN		Pentacel	DTaP-Hib-IPV
	WVTN		Plaque	Plaque
	WVTN		Pneumovax 23	Pneumococcal 23
	WVTN		PNU-IMUNE 23	Pneumococcal 23
	WVTN		PREHEVBRIO	HepB recombinant, 3-antigen, Al(OH)3
	WVTN		Prevnar 7 (formerly Prevnar)	Pneumo-Conjugate Vaccine, 7 valent
	WVTN		Prevnar13	Pneumo-Conjugate Vaccine, 13 valent
	WVTN		Prevnar 20	Pneumo-conjugate 20
	WVTN		Priorix	measles, mumps, and rubella virus vaccine
	WVTN		ProHIBit	Hib-PRP-D
	WVTN		ProQuad	MMRV
	WVTN		Quadracel	DTaP-IPV
	WVTN		RABAVERT	Rabies - IM fibroblast culture
	WVTN		RABAVERT ID	Rabies-ID
	WVTN		Recombivax-Adult	HepB-Adult
	WVTN		Recombivax-Dialysis	HepB-Dialysis 4 dose
	WVTN		Recombivax Peds	HepB-Peds
	WVTN		RespiGam	RSV-RgIV
	WVTN		Rotarix	Rotavirus-monovalent, live, oral
	WVTN		RotaShield	Rotavirus-tetravalent, live
	WVTN		RotaTeq	Rotavirus-pentavalent, live, oral
	WVTN		RhoGAM	Rho(D) Ig full-dose

Type	Table	Name	Value	Description
	WVTN		Rubella	Rubella
	WVTN		Shingrix	Zoster Subunit
	WVTN		Stamaril	Yellow Fever vaccine - alt
	WVTN		Synagis	RSV-RgIM
	WVTN		Td	Td
	WVTN		TENIVAC	Td-PF
	WVTN		Tetramune	DTP-Hib
	WVTN		TriHIBit	DTaP-Hib
	WVTN		Tripedia	DTaP
	WVTN		Trumenba	Meningococcal B, recombinant
	WVTN		TT	Tetanus
	WVTN		Twinrix	HepA-HepB Adult
	WVTN		Typhim Vi	Typhoid-ViCPs
	WVTN		Typhoid	Typhoid-HP
	WVTN		Typhoid-AKD	Typhoid-AKD
	WVTN		Vaccinia-Diluted	Vaccinia (small pox), diluted
	WVTN		Vaccinia-Ig	Vaccinia immune globulin VIG
	WVTN		VAQTA Adult	HepA Adult
	WVTN		VAQTA Peds 2 Dose	HepA Ped 2 Dose
	WVTN		VAQTA Peds 3 Dose	HepA Ped 3 Dose
	WVTN		Varivax	Varicella
	WVTN		VAXCHORA	cholera, live attenuated
	WVTN		VAXELIS	DTaP,IPV,Hib,HepB
	WVTN		VAXNEUVANCE	Pneumo-conjugate 15
	WVTN		Vivotif Berna/Ty21a	Typhoid-Oral
	WVTN		Vivotif Berna	Typhoid-Oral
	WVTN		Ty21a	Typhoid-Oral
	WVTN		VZIg	VZIg
	WVTN		YF-VAX	Yellow Fever
	WVTN		Zostavax	Zoster Shingles, (live)
GRITS	**C4**	**Vaccines Administered (CPT code=C4)**	**(use in RXA-5)**	(Note: CPT End Dates indicate those CPT codes deleted in 1997 or later. 90714 was deleted in 1999 for Typhoid and re-issued in 2005 for Td preservative vaccine. It, therefore, has both a Start and End Date. For more information please reference "Current Procedural Terminology (CPT) Codes Mapped to CVX Codes" at https://www2a.cdc.gov/vaccines/iis/iisstandards/vaccines.asp?rpt=cpt
	C4		90476	Adeno tp4
	C4		90477	Adeno tp7
	C4		90581	Anthrax
	C4		90586	BCG-BC
	C4		90585	BCG-TB
	C4		90287	Botulinum-antitoxin
	C4		90288	Botulism
	C4		90625	cholera, live attenuated
	C4		90725	cholera, unspecified formulation
	C4		90592	Cholera-O - End 12/31/2000
	C4		90291	CMV-IGIV
	C4		91300	COVID-19, mRNA, LNP-S, PF, 30 mcg/0.3 mL
	C4		91301	COVID-19, mRNA, LNP-S, PF

Type	Table	Name	Value	Description
	C4		91303	COVID-19, vector-nr, rS-Ad26, PF, 0.5 mL
	C4		91305	COVID-19 mRNA 30 mcg/0.3 mL tris-sucrose
	C4		91306	COVID-19, mRNA, LNP-S, PF
	C4		91307	Pfizer COVID-19, mRNA, LNP-S, PF, 10mcg/0.2mL
	C4		91308	COVID-19 mRNA 3 mcg/0.2 mL tris-sucrose
	C4		91309	COVID-19, mRNA, LNP-S, PF, 50 mcg/0.5 mL
	C4		91311	COVID-19, mRNA, LNP-S, PF, ped 25 mcg/0.25 mL
	C4		91312	COVID-19 mRNA LNP-S bivalent PF 0.3mL
	C4		91313	COVID-19 mRNA LNP-S bivalent PF 0.5mL/0.25mL
	C4		91314	COVID-19 mRNA LNP-S bivalent PF 0.5mL/0.25mL
	C4		91315	COVID-19 mRNA LNP-S bivalent PF 0.2mL
	C4		91316	COVID-19, mRNA, LNP-S, bivalent, PF, 3 mcg/0.2 mL dose
	C4		91317	COVID-19, mRNA, LNP-S, bivalent booster, PF, 10 mcg/0.2 mL
	C4		91320	COVID-19, LNP-S, tris-sucrose, 30 mcg/0.3 mL
	C4		91319	COVID-19, mRNA, LNP-S, PF, tris-sucrose, 10 mcg/0.3 mL
	C4		91318	COVID-19, mRNA, LNP-S, PF, tris-sucrose, 3 mcg/0.3 mL
	C4		91304	COVID-19, subunit, rS-nanoparticle, adjuvanted, PF, 5 mcg/0.5 mL
	C4		91322	COVID-19, mRNA, LNP-S, PF, 50 mcg/0.5 mL
	C4		91321	COVID-19, mRNA, LNP-S, PF, 25 mcg/0.25 mL
	C4		90728	Deleted BCG code - End 12/31/1999
	C4		90730	Deleted HepA code - End 12/31/1999
	C4		90745	Deleted HepB - End 12/31/2000
	C4		90731	Deleted HepB code - End 12/31/1997
	C4		90737	Deleted Hib code - End 12/31/1999
	C4		90724	Deleted Influenza code - End 12/31/1999
	C4		90726	Deleted Rabies - End 12/31/1999
	C4		90296	Diphtheria-antitoxin
	C4		90719	Diphtheria
	C4		90702	DT
	C4		90728	Deleted BCG code - End 12/31/1999
	C4		90730	Deleted HepA code - End 12/31/1999
	C4		90700	DTaP
	C4		90723	DTaP-HepB-IPV
	C4		90698	DTaP-Hib-IPV
	C4		90721	DTaP-Hib
	C4		90696	DTaP-IPV
	C4		90701	DTP
	C4		90720	DTP-Hib
	C4		90659	FLU > 12 Years - End 12/31/2002
	C4		90658	FLU IIV3
	C4		90688	FLU IIV4
	C4		90657	FLU 6-35 Months IIV3
	C4		90687	FLU 6-35 Months IIV4
	C4		90660	FLU-LAIV3 - End 07/01/2013
	C4		90672	FLU-LAIV4
	C4		90655	FLU-PF 6-35 Months IIV3
	C4		90685	FLU-PF 6-35 Months IIV4
	C4		90656	FLU-PF IIV3

Type	Table	Name	Value	Description
	C4		90686	FLU-PF IIV4
	C4		90673	FLU-PF RIV3
	C4		90682	FLU-PF RIV4
	C4		90662	FLU, High-Dose – ***End 06/30/2020***
	C4		90662	FLU, high-dose, quadrivalent – ***Start 07/01/2020***
	C4		90661	FLU, injectable, MDCK, pres free
	C4		90674	FLU, injectable, MDCK, pres free quad
	C4		90756	FLU, injectable, MDCK, quadrivalent, preservative
	C4		90630	FLU, intradermal, quadrivalent, pres free
	C4		90654	FLU, Intradermal trivalent, pres free
	C4		90653	FLU, trivalent, adjuvanted
	C4		90694	FLU, quadrivalent, adjuvanted
	C4		90371	HBIG
	C4		90633	HepA ped-2 dose
	C4		90634	HepA ped-3 dose
	C4		90632	HepA adult
	C4		90636	HepA-HepB
	C4		90743	HepB adolescent
	C4		90739	HepB, adult, 2-dose
	C4		90740	HepB dialysis
	C4		90746	HepB adult
	C4		90747	HepB-dial
	C4		90748	HepB-Hib
	C4		90744	HepB-peds
	C4		90759	HepB recombinant, 3-antigen, Al(OH)3
	C4		90645	Hib-HbOC
	C4		90644	Hib-MenCY-TT
	C4		90647	Hib-OMP
	C4		90646	Hib-PRP-D
	C4		90648	Hib-PRP-T
	C4		90651	HPV9
	C4		90650	Human Papillomavirus-bivalent
	C4		90649	Human Papillomavirus-quadrivalent
	C4		90281	IG
	C4		90283	IGIV
	C4		90735	Japanese Enceph-SC
	C4		90738	Japanese Enceph-IM
	C4		90665	Lyme
	C4		90705	Measles
	C4		90708	Measles-Rubella
	C4		90620	MeningB, OMV
	C4		90621	MeningB, recombinant
	C4		90619	meningo poly (A,C,Y,W-135) TT conjugate
	C4		90733	Meningococcal-Polysaccharide
	C4		90734	Meningococcal-MCV4
	C4		90707	MMR
	C4		90710	MMRV
	C4		90704	Mumps
	C4		91304	COVID-19 vaccine, Subunit, PF, 0.5 mL

Type	Table	Name	Value	Description
	C4		90663	Novel Influenza-H1N1-09, nasal
	C4		90663	Novel Influenza-H1N1-09, preserve-free
	C4		90663	Novel Influenza-H1N1-09
	C4		90663	Novel Influenza-H1N1-09 all formulations
	C4		90470	Novel Influenza-H1N1-09, nasal
	C4		90470	Novel Influenza-H1N1-09, preserve-free
	C4		90470	Novel Influenza-H1N1-09
	C4		90470	Novel Influenza-H1N1-09 all formulations
	C4		90727	Plague
	C4		90669	Pneumo-Conjugate 7
	C4		90670	Pneumo-Conjugate 13
	C4		90671	Pneumo-conjugate 15
	C4		90677	Pneumo-conjugate 20
	C4		90732	Pneumococcal 23
	C4		90713	Polio IPV
	C4		90712	Polio oral
	C4		90707	Priorix
	C4		90376	Rabies-HT
	C4		90676	Rabies-ID
	C4		90375	Rabies-IG
	C4		90675	Rabies-IM
	C4		90675	Rabies - IM Diploid cell culture
	C4		90675	Rabies - IM fibroblast culture
	C4		90726	Rabies-unspecified
	C4		90384	Rho(D) Ig full-dose
	C4		90385	Rho(D) Ig mini-dose
	C4		90386	Rho(D) IgIV
	C4		90681	Rotavirus-monovalent, live, oral
	C4		90680	Rotavirus-pentavalent, live, oral
	C4		90378	RSV-IgIM
	C4		90379	RSV-IgIV
	C4		90679	RSV, recombinant, adjuvant reconstituted
	C4		90678	RSV, bivalent, diluent reconstituted
	C4		90380	RSV, mAb, nirsevimab-alip, 0.5 mL, <= 24 mos.
	C4		90381	RSV, mAb, nirsevimab-alip, 1.0 mL, <= 24 mos.
	C4		90706	Rubella
	C4		90709	Rubella-Mumps
	C4		90611	Smallpox monkeypox vaccine
	C4		90718	Td
	C4		90714	Td-PF - Start 07/01/2005
	C4		90715	Tdap
	C4		90703	Tetanus
	C4		90389	TetanusIG
	C4		90693	TyphoidAKD
	C4		90692	TyphoidHP
	C4		90690	Typhoid-O
	C4		90691	TyphoidVi
	C4		90714	Typhoid-Unspecified - End 12/31/1999
	C4		90622	Vaccinia (Smallpox)

Type	Table	Name	Value	Description
	C4		90393	Vaccinia-lg
	C4		90716	Varicella
	C4		90697	VAXELIS
	C4		90396	VZlg
	C4		90717	Yellow Fever vaccine, live
	C4		90736	Zoster, Shingles (live)
	C4		90750	Zoster Subunit