



HL7 - General Transfer Specification

Introduction

The Georgia Registry of Immunization Transactions and Services (*GRITS*) has made available an interactive user interface on the World Wide Web for authorized users to enter, query, and update client immunization records. The Web interface makes immunization registry 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 having billing needs and do not want to enter data into two disparate systems. GRITS allows providers to use the Health Level Seven (HL7) standard to exchange client and immunization information with the registry.

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 healthcare finance, and no single application is likely to use all of its content. The CDC has worked with HL7 developers to create a set of messages that permit exchange of immunization data. This document, the *GRITS HL7 – General Transfer Specification*, covers the subset of HL7 used to exchange client and immunization records between the registry 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.
- Segments are in turn made up of several **fields** separated by a delimiter character, “|”.
- Each segment begins with a three-letter code identifying the segment type.

```
MSH|^~\&||PCHPD||GRITS|20040930||VXU^V04|test001|P|2.4|||ER
PID|||CHRT101^^^PI^||SMITH^JOHN^J|DOE|20040901|M
PV1|1|R||||||||||V02^19970903
RXA|0|999|20040903|20040903|08^Hep B, adolescent or pediatric^CVX^^^|0.5
```

Details for the structure of an HL7 message are explained throughout this document; the above example demonstrates 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: *PCHPD*), 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 identification information such as the client’s name (*JOHN F. SMITH*), birth date (September 1, 2004, *20040901*, YYYYMMDD format), and other identifying fields.
- **PV1** – Patient Visit segment identifies the client’s eligibility for State-Supplied Vaccine (*V02* indicates Medicaid).
- **RXA** – Pharmacy Administration segment carries immunization data for the client including the type of immunization (*Hep B, adolescent or pediatric*) and date of administration (September 3, 2004, *20040903*, YYYYMMDD format).

Scope of This Document

The General Transfer Specification (GTS) documented here supports automated exchange of data between the registry repository and outside systems, making client and immunization records available in both places while avoiding the need to enter data twice. The remainder of this document specifies how files of HL7 messages are constructed for registry purposes. It does not cover the methods used to transmit files between the registry central repository and outside systems. It covers only a small subset of the very extensive HL7 standard. Files of messages constructed from the guidelines in this document will fall within the HL7 standard, but there are a wide variety of other possible HL7 messages that are outside the scope of this document.

References

- See Version 2.4 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 the Implementation Guide for Immunization Data Transactions using Version 2.3.1 of the HL7 Protocol (Implementation Guide 2.1, September 2002) with the purpose of keeping the use of HL7 for immunization data as uniform as possible. This document is compliant with HL7's Version 2.4, and can be found at <http://www.cdc.gov/nip/registry/hl7/hl7guide.pdf>.

Message Segments: Field Specifications and Usage

HL7 Segment Structure

Each segment consists of several fields, separated by the field separator character, “|”. The tables below that define how a segment is structured contain the following columns:

| COLUMN | DESCRIPTION |
|--------------|---|
| SEQ | The ordinal position of the field in the segment. Since the registry does not use all possible fields in 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 the registry. 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 HL7 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 the registry. The elemental data types Numeric (NM) and String (ST) consist of one value, while some data types, such as Extended Person Name (XPN) are composite.

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 repetitions 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, as its definition requires, uses the field separator “|” immediately after the “MSH” code identifying the segment, and 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 usage, 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. HL7 permits use of other delimiters besides the recommended ones, and the delimiters used in each message are given in the Message Header segment. However, GRITS will always use the recommended delimiters when sending files and requires their use for files received. This is compliant with HL7’s recommendations for delimiter characters.

Rules for Sending Systems

To construct HL7 messages, the following rules apply:

- 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 present in the segment. Since later fields in the segment are encoded by 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 that are present but explicitly null are represented by empty double quotes “”.
- 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).

To receive HL7 messages, the following rules apply:

- 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 the registry may include many segments besides the ones in this document, and the registry ignores them. The registry 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 those needed to construct types of messages used by the registry. Each segment is given a brief description excerpted from the HL7 standard. The tables define what fields make up each segment. Since the registry does not use all the fields 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, the field separators maintain the ordinal position of the fourth field: |field1|||field4.

HL7 Message Types Used in Batch Transmissions

The registry uses messages of three types for batch transactions, one for sending client data without immunizations, one for sending immunizations, and one for acknowledging message received. The tables below show how a message of each type is constructed from several segments. Each segment is one line of text, ending with the carriage return character, so HL7 messages are entirely readable and printable, though they may appear somewhat cryptic due to the scarcity of white space. (The HL7 standard contains 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 may be repeated. Thus, a message of type ADT could be composed of just MSH, PID and PV1 segments. The message could contain zero to any number of NK1 segments. If a segment processed by the registry is present, it must appear in the correct order as listed below. The full HL7 standard allows additional segments within these message types, but they are unused by the registry. In order to remain compliant with HL7, their use is not an error, but the message recipient can ignore their content. The segments documented here are sufficient to support the principal registry functions of storing data about clients and immunizations.

| <u>ADT</u> | <u>Update Patient Information</u> |
|------------|-----------------------------------|
| MSH | Message Header |
| PID | Patient Identification |
| [*PD1] | Patient Additional Demographic |
| [[NK1]] | Next of Kin/Associated Parties |
| PV1 | Patient Visit |
| [**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)

| <u>VXU</u> | <u>Unsolicited Vaccination Record Update</u> |
|------------|---|
| MSH | Message Header |
| PID | Patient Identification |
| [PD1] | Patient Additional Demographic |
| [[NK1]] | Next of Kin/Associated Parties |
| PV1 | Patient Visit |
| {RXA} | Pharmacy Administration |
| [RXR] | Pharmacy Route (Only one RXR per RXA segment) |
| *[OBX] | Observation/Result |

*An OBX segment that contains a Reaction and/or VAERS event must be tied to a specific RXA segment (immunization event), and therefore, must be listed in a VXU message directly following the RXA segment. If the optional RXR segment is utilized, the OBX segment will follow the RXR segment. An OBX segment that contains a Contraindication is not tied to a specific RXA segment, so GRITS recommends grouping all Contraindications at the end of the VXU message. (See OBX – Observation/Result Segment)

| | |
|------------|-------------------------------|
| <u>ACK</u> | <u>General Acknowledgment</u> |
| MSH | Message Header |
| MSA | Message Acknowledgment |
| [ERR] | Error |

HL7 Batch Protocol

Each message type listed in the previous section can logically stand on its own, but HL7 is also compatible with various methods of online and batch transmission. HL7 provides special header and footer segments that are used when a number of messages are gathered into a batch for transmission as a file. 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.

If submitting an HL7 Version 2.4 file, the file header/trailer segments and the batch header/trailer segments are **OPTIONAL**. If submitting an HL7 Version 2.3.1 file, the file header/trailer segments and the batch header/trailer segments are **REQUIRED**.

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

FHS – File Header Segment

The FHS 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 corresponding field in MSH segment listed below.
- FHS-2 Same definition as corresponding field in MSH segment listed below.
- FHS-3 Same definition as corresponding field in MSH segment listed below.
- FHS-4 Same definition as corresponding field in MSH segment listed below.
- FHS-6 Same definition as corresponding field in MSH segment listed below.
- FHS-7 Same definition as corresponding field in MSH segment listed below.
- 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 - File Trailer Segment

The FTS segment defines the end of a file.

| SEQ | LEN | DT | R/M | RP/# | TBL# | ELEMENT NAME |
|-----|-----|----|-----|------|------|----------------------|
| 1 | 10 | NM | M | | | 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 - Batch Header Segment

The BHS 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 Same definition as corresponding field in MSH segment listed below.
- BHS-2 Same definition as corresponding field in MSH segment listed below.
- BHS-3 Same definition as corresponding field in MSH segment listed below.
- BHS-4 Same definition as corresponding field in MSH segment listed below.
- BHS-6 Same definition as corresponding field in MSH segment listed below.
- BHS-7 Same definition as corresponding field in MSH segment listed below.
- 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 - Batch Trailer Segment

The BTS 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 may be included for convenience, but has no effect on processing.

HL7 Control Segments

MSH – Message Header Segment

The MSH segment defines the intent, source, destination, and some specifics about 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 | EI | | | | Sending Application |
| 4 | 180 | EI | | | | Sending Facility |
| 6 | 180 | EI | | | | Receiving Facility |
| 7 | 26 | TS | | | | Date/Time Of Message |
| 9 | 7 | CM | 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 | | | 0155 | Accept Acknowledgment Type |

Field Notes:

- MSH-1 Determines the separator between the segment ID and the first real field, *MSH-2-Encoding characters*. As such it serves as the separator and defines the character to be used as a separator for the rest of the message. 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 ^~\&, (ASCII 94, 126, 92, and 38, respectively).
- MSH-3 Name of the sending application. When receiving, GRITS ignores this field. When sending, GRITS will use “GRITS”. See MSH-4 and MSH-6 for the fields principally used to identify sender and receiver of the message.
- MSH-4 Identifies the owner of the message information. When the provider organization owning the information is different than the organization transmitting the message, use the GRITS provider ID or short name of the provider organization that owns the information; otherwise, this field may be left blank. Contact the GRITS Help Desk for your appropriate Organization ID or short name. If using only the Organization ID, include the ^ character before the ID. For messages sent by the registry, the Sending Facility will read “GRITS”.

Field 4 example: |^1028|

- MSH-6 Identifies the message receiver. Use **GRITS** when sending to GRITS. For messages sent by the registry, the Receiving Facility will be populated with the Provider Organization’s short name. Contact the GRITS Help Desk for your appropriate Organization short name.
- MSH-7 Date and time the message was created. Format is YYYYMMDD. GRITS ignores any time component.
- MSH-9 Two components of this field create 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 for a message conveying client information or the value VXU^V04 for a message conveying client and immunization information. For acknowledgement messages the value ACK is sufficient and the second component is omitted.
- MSH-10 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 by GRITS in MSH-10 and MSA-2.
- MSH-11 See Table 0103. The processing ID to be used in GRITS is **P** for Production processing.
- MSH-12 See Table 0104. Use a value of **2.4** to indicate HL7 Version 2.4. For GRITS the version number that is present in the first MSH segment of the file will be the version assumed for the entire file. If no version number is present in the first MSH segment, the file will be rejected.
- MSH-15 See Table 0155. Controls whether an acknowledgement is generated for the message sent. GRITS suggests a value of ER to ask that acknowledgements be sent only for messages that cannot be processed normally. GRITS will assume this value if the field is not present.

Example:

```
MSH|^~\&||PCHPD^1028||GRITS|20040930||VXU^V04|test001|P|2.4||ER
```

MSA – Message Acknowledgment Segment

The MSA segment contains information sent by the registry to acknowledge an incoming message.

| SEQ | LEN | DT | R/M | RP/# | TBL# | ELEMENT NAME |
|-----|-----|----|-----|------|------|--------------------------|
| 1 | 2 | ID | R | | 0008 | Acknowledgment Code |
| 2 | 20 | ST | R | | | Message Control ID |
| 3 | 80 | ST | | | | Text Message |
| 4 | 15 | NM | | | | Expected sequence number |
| 6 | 100 | CE | | | 0357 | Error condition |

Field Notes:

MSA-1 See Table 0008. GRITS generates **AR** – application rejection when a sender’s message encounters informational or rejection errors during processing. **AA** - acknowledgment acceptance is generated when a sender’s message has processed normally.

MSA-2 GRITS will echo the Message control ID sent by the sending system in MSH-10. This allows the sending system to associate each message with a response.

MSA-3 Text of an error message.

MSA-4 This optional numeric field is used in the sequence number protocol.

MSA-6 See Table 0357. Error Condition that further specifies an error identified in MSA-3.

Example:

```
MSA|AR|testfile001|MESSAGE REJECTED – INVALID MESSAGE TYPE SPECIFIED|0||100^Segment sequence
error^HL70357^^^
```

ERR – Error Segment

The ERR segment is sent by the Registry to add error comments to acknowledgment messages. If a message was rejected for functional reasons, this segment will locate the error and describe it using locally established codes.

| SEQ | LEN | DT | R/M | RP/# | TBL# | ELEMENT NAME |
|-----|-----|----|-----|------|------|-------------------------|
| 1 | 80 | CM | R | Y | | Error Code and Location |

Field Notes:

ERR-1 A composite field with four components.

```
<segment ID (ST)>^<sequence (NM)>^<field position (NM)>^<code identifying error (CE)>
```

The first component identifies the segment containing the error. The second component identifies the input file line number of the segment containing the error. The third component identifies, by ordinal number, the field containing the error. The fourth component identifies, by ordinal number, the field component containing the error (0 is used if not applicable). The remaining five components of the CE data type are not valued and their ‘^’ separators are not generated. Note that error text is transmitted in field MSA-3.

Example: Below is an example of a MSH segment that contains an invalid message type in MSH-9 and the Error segment that is generated as a result.

```
MSH|^~\&||PCHPD^1028||GRITS|20040930||BAD^V04|test001|P|2.4||ER
```

```
ERR|MSH^3^9^0
```

The above ERR segment identifies the MSH segment occurring on line 3 of the input file whose required 9th field (Message Type) contains an invalid value. No component is specified in this Error segment.

Patient Administration Message Segments

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 |
|-----|-----|-----|-----|------|------|-----------------------------|
| 2 | 20 | CX | | | | Patient ID (External ID) |
| 3 | 20 | CX | R | Y | 0203 | Patient ID (Internal ID) |
| 5 | 48 | XP | R | Y | | Patient Name |
| 6 | 48 | XP | | Y | | Mother's Maiden Name |
| 7 | 26 | TS | M | | | Date/Time of Birth |
| 8 | 1 | IS | | | 0001 | Sex |
| 10 | 80 | CE | | Y | 0005 | Race |
| 11 | 106 | XAD | | Y | | Patient Address *see Note |
| 19 | 16 | ST | | | | SSN Number – Patient |
| 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-2 If available, use the client's GRITS client ID.

PID-3 See Table 0203. Use the sending system's Chart Number and/or other identifier if available. Sub-components 1 (ID) and 5 (identifier type code) are required. For messages sent by the registry, the Patient ID will contain the client's chart number (when available) and the GRITS client ID with the 'SR' (State Registry ID) identifier type.

PID-5 See Table 0200 and the XP data type. Last name and first name are required in the first two components. *NOTE: If client does not have a first name, NO FIRST NAME must be entered.* GRITS does not support repetition of this field.

PID-6 See Table 0200 and the XP data type. Use the mother's maiden last name and first name in the first two components. GRITS uses only last name and first name for client identification. If the Name Type Code component is included, use M-Maiden. A mother's legal name might also appear in the context of an NK1 segment.

PID-7 Provide the year, month, and day of birth (Format is YYYYMMDD). GRITS ignores any time component.

PID-8 See Table 0001. Use F, M, or U.

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. For Georgia addresses, place the county code in component 9. GRITS does not support repetition of this field. *Note: GRITS recommends that PID-11 Patient Address be left blank for clients with parent/guardians. The NK1 segment is used to transmit responsible person address information. If an address is included in PID-11, GRITS will create the client as a responsible person with the relationship code '18 –Self'.*

PID-13 See Table 0190, 0201 and the XTN data type. If component 2 – telecommunication use code is specified as 'PRN' (Table 0201), GRITS will store the 6th, 7th and 8th components (area code, phone number and extension). Otherwise, GRITS will assume that the phone number is specified in the first component in the following format: [NNN] [(999)] 999-9999 [X99999] [B99999] [C any text]. GRITS will only store the area code, phone number and extension - using the X value as the phone extension. GRITS does not support repetition of this field.

PID-19 NOTE: Social security number is used for identification purposes only, and is not displayed on screens or distributed to Provider Organizations. GRITS recommends specification of the social security number in PID-03. Support of PID-19 is for backward compatibility only.

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-23 Format the client's birthplace in three components: the two-character country code (see Table 0212), the two-character state or province code (within US or Canada only), and the five-character county code (Georgia only, see Table 0289). Omit trailing components that are unknown or inapplicable.

PID-24 Use Y to indicate that the client was born in a multiple birth.

PID-25 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.

PID-29 The date of death, if client is deceased. Provide the year, month, and day of death (YYYYMMDD). GRITS ignores any time component.

Example:

```
PID|||111223333^^^SS^~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^^jsmith@email.com^^555^4443333^4321^|||||||2186-5^not Hispanic or Latino^HL70189^^^|||||||

PD1 – Patient Additional Demographic Segment

The PD1 carries patient additional demographic information that is likely to change. Since the PD1 segment is optional, if PD1 is not included in a VXU or ADT message, GRITS will assign new clients the following default values: Recall/Reminder notices (PD1-11) = Yes; Allow Sharing indicator = Yes; and, Active/Inactive indicator (PD1-16) = Active.

| 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. Indicates whether recall/reminder notices may be sent to a patient.

PD1-12 See Table 0136. Allow sharing indicator. Indicates whether or not consent has been given for record sharing with other organizations.

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

PD1-16 See Table 0441. Active/Inactive indicator. Identifies the registry status of the client.

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.

Example:

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

NK1 – Next of Kin/Associated Parties Segment

The NK1 segment contains information about the patient's next of kin and other associated or related parties. This segment is allowed to repeat, providing information about multiple related parties.

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

Field Notes:

NK1-1 The Set ID field numbers each NK1 segment if multiple NK1 segments are associated with a message. Use "1" for the first NK1, "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 See the XPN data type. Name of the responsible person who cares for the client. GRITS does not support repetition of this field.

NK1-3 See Table 0063. Relationship of the responsible person to the client. If a responsible person name, address, and/or telephone is present, but no relationship code is indicated, the relationship code will default to GRD 'Guardian.' A client may have multiple responsible persons with the same relationship code. Use the first three components of the CE data type.

Example: |FTH^Father^HL70063^^^|

NK1-4 See the XAD data type. Responsible person's mailing address. For Georgia addresses, place the county code in component 9. GRITS does not support repetition of this field.

NK1-5 See Table 0190, 0201 and the XTN data type. Responsible person's phone number. If component 2 – telecommunication use code is specified as "PRN" (Table 0201), GRITS will store the 6th, 7th and 8th components (area code, phone number and extension). Otherwise, GRITS will assume that the phone number is specified in the first component in the following format: [NNN] [(999)] 999-9999 [X99999] [B99999] [C any text]. GRITS will only store the area code, phone number and extension - using the X value as the phone extension. GRITS does not support repetition of this field.

Example:

NK1|1|SMITH^JOHN^J^SR|FTH^Father^HL70063^^^|111 My Ave^Apt B^Atlanta^GA^54321^^H^^GA067^^
|^PRN^^jsmith@email.com^^555^4443333^4321^

PV1 – Patient Visit Segment

The PV1 segment is used to send visit-specific information. It carries the client’s eligibility for State-Supplied Vaccine at the time the vaccine was administered.

| SEQ | LEN | DT | R/M | RP/# | TBL# | ELEMENT NAME |
|-----|-----|----|-----|------|------|-----------------|
| 2 | 1 | IS | R | | 0004 | Patient Class |
| 20 | 50 | FC | M | Y | 0064 | Financial Class |

Field Notes:

PV1-2 See Table 0004. HL7 recommends that registries use ‘R’ for recurring.

PV1-20 See Table 0064. Eligibility for State-Supplied vaccine. This field contains an eligibility code and effective date. An eligibility code is MANDATORY for new immunizations. This field is repeatable to allow immunizations administered on different dates to have unique eligibility status. Only 1 eligibility code will be stored on each immunization record. The effective date is not required, but it is recommended. If no eligibility effective date is present, the most recent immunization date will be used as the incoming effective date.

Client immunizations: January 15, 2003 – HepB; March 24, 2003 – HepB, DTaP, IPV, HIB; and June 3, 2003 – HepB, DTaP, IPV, HIB.

- GRITS recommends that the effective date be the date the earliest immunization was administered under a given eligibility status. In this example, all immunizations on or after January 15, 2003 will load with the V02 eligibility code.

Example: PV1||R|||||||||||||||||V02^20030115

- The next example shows a client who changed eligibility on March 1, 2003. All immunizations between January 15, 2003 and February 28, 2003 will load with the V02 eligibility code. All Immunizations on or after March 1, 2003 will load with the V01 eligibility code.

Example: PV1||R|||||||||||||||||V02^20030115~V01^20030301

- The next example shows a client whose only eligibility effective date is April 1, 2003 – after the date of several immunizations. All HISTORICAL immunizations administered prior to April 1, 2003 will be loaded with the V00 eligibility code ‘Eligibility Not Determined/Unknown.’ All NEW immunizations administered prior to April 1, 2003 will be rejected for not having the mandatory eligibility code.

Example: PV1||R|||||||||||||||||V01^20030401

- GRITS will send the current client eligibility as the first component of PV1-20. All subsequent repeatable components correspond to the client’s immunizations.

Please note: If you wish to transmit multiple eligibilities for immunizations administered on the same day, for example Tdap and MCV4 as V01 and HPV as V05; and client eligibility is V01:

- Send the HPV immunization separately first with the V05 eligibility
- Send the other two immunizations to add the immunizations as V01 and to update the client eligibility in GRITS to V01

RXA – Pharmacy/Treatment Administration Segment

The RXA carries pharmacy administration data. It is a repeating segment and can record unlimited numbers of vaccinations. GRITS supports deduction of new immunizations from GRITS inventory as well as the deletion of immunizations from the registry that were added incorrectly.

| 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 | | 0292 | Administered Code |
| 6 | 20 | NM | R | | | Administered Amount |
| 9 | 200 | CE | | Y | NIP001 | Administration Notes |
| 10 | 200 | XCN | | Y | | Administering Provider |
| 11 | 200 | CM | | | | Administered-at location |
| 15 | 20 | ST | | Y | | Substance Lot Number |
| 17 | 60 | CE | | Y | 0227 | Substance Manufacturer Name |
| 16 | 26 | TS | | Y | | Substance Expiration Date |
| 21 | 2 | ID | | | 0323 | Action code-RXA |
| 22 | 26 | TS | | | | System Entry Date/Time |

Field Notes:

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

RXA-2 Required by HL7. Use **999** 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), C4 (CPT Codes), WVTN (Vaccine Trade Names), and WVGC (Vaccine Group Codes). Order of preference: Trade Name, CPT, CVX, Vaccine Group.

- 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^^^|

- For all other code sets, provide information in the **SECOND TRIPLET** of the RXA-5 segment. Provide the identifier in the fourth component, text description in the fifth component (optional), and the name of coding system in the sixth component.

WVTN example: |^^^INFANRIX^DTP/aP^WVTN|

CPT example: |^^^90700^DTP/aP^C4|

WVGC example: |^^^DTP/aP^DTP/aP^WVGC|

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

CVX and CPT example: |20^DTP/aP^CVX^90700^DTP/aP^C4|

- Note: If the CPT Code set is used, the data exchange process will assign and store a trade name on the database for the incoming immunizations (that do not deduct from inventory) when the incoming CPT Code correlates to a single trade name.**

RXA-6 Required by HL7. Quantity of vaccine administered, in milliliters. Zero may be entered when quantity is unknown.

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.

RXA-10 Identifies the name of the person physically administering the vaccine (the vaccinator). GRITS will use components 2 – 7 to record the vaccinator’s name. GRITS does not support repetition of this field.

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 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. Provides a method for correcting vaccination information previously transmitted incorrectly. To delete an immunization from GRITS, this field must be populated with “D”. Immunizations deducted from GRITS inventory cannot be deleted. An add/update occurs when this field is populated with anything other than “D”.

RXA-22 Timestamp telling when the immunization record was entered into the sender’s database. This field is optional, and the receiver is free to ignore it during processing.

Example: RXA|0|999|20040903|20040903|08^Hep B, adolescent or pediatric^CVX^^^|0.25|||00
|^TRAPPER^JOHN^F^JR^DR^MD|^4321&Test Site|||lot13221b||AB^Abbott^MVX^^^|||A|20040904

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 arm).

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

OBX – Observation/Result Segment

The Observation/Result Segment is used to transmit an observation. GRITS accepts three types of observations: reactions, vaccine adverse events, and contraindications. Reactions and vaccine adverse events point to a specific immunization that caused the condition, so they must be associated with a specific immunization. An OBX segment that contains a Reaction and/or VAERS event must be tied to a specific RXA segment (immunization event), and therefore, must be listed in a VXU message directly following the RXA segment. If the optional RXR segment is utilized, the OBX segment will follow the RXR segment. Contraindications to a vaccine exist with or without having received an immunization, so they are not associated with an immunization. An OBX segment that contains a Contraindication is not tied to a specific RXA segment, so GRITS recommends grouping all Contraindications at the end of the VXU message.

| SEQ | LEN | DT | R/M | RP/# | TBL# | ELEMENT NAME |
|-----|-------|----|-----|------|-------------------|------------------------------|
| 1 | 4 | SI | | | | Set ID-OBX |
| 2 | 3 | ID | | | | Value type |
| 3 | 80 | CE | R | | NIP003 | Observation Identifier |
| 5 | 65536 | - | R | Y | NIP004, NIP005 | 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 Contains the data type, which defines the format of the observation value in OBX-5. Use CE for GRITS.

OBX-3 See Table NIP003. Identifies the general category of an observation.

Example: |30945-0^Contraindication^LN|

OBX-5 See Table NIP004 and NIP005. Identifies the specific value observed. GRITS has imposed a CE data type upon this field; the first component of which is required.

Example: |23^IG received^NIP|

OBX-11 See Table 0085. Required for HL7. Use F for GRITS.

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

OBX-17 See Table OBMT. For use with Immunity to Varicella only. When Immunity to Varicella is indicated in OBX-5, the Observation Method is mandatory.

Example of Contraindication - Immunity to Varicella:

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

Examples of Contraindications, Reactions, and VAERS events:

Contraindication: OBX|1|CE|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

File Interchange between GRITS and Outside Systems

The central repository of GRITS contains records of clients from around the state. Client and immunization records flow both ways between GRITS and outside systems. Data for a particular client is transmitted by GRITS to an outside system at a Provider Organization only if the client is already identified as having a relationship with that Provider Organization, and this relationship is created by transmitting the client's record to GRITS. So an exchange through this General Transfer Specification of information about a given client is always initiated by the outside system. There are three (3) options via the GRITS-Web interface for exchanging data with GRITS. 1) The Provider Organization can send data to GRITS and request no data be returned from GRITS (PO to GRITS). 2) The Provider Organization can request data from GRITS while not providing data to GRITS (GRITS to PO). (3) The Provider Organization can send data to GRITS and GRITS will return any updated information regarding clients having a relationship with the Provider Organization to the Provider Organization (Bi-directional).

Note that client and immunization data can also be queried, entered, and/or modified using the GRITS-Web interface, which provides an alternate means of identifying a client as having a relationship with a Provider Organization. Use of the GRITS-Web interface, however, is not required to create a relationship between a Provider Organization and a client; the first transmission to GRITS of a client immunization record creates the link that thereafter causes GRITS to transmit that client's record to the outside system.

HL7 messages are always part of a two-way exchange between an initiating system and a responder. Sometimes the initial message implies specific data to be sent in a response. Other times, as is the case with GRITS client and immunization data, the principal response of the receiving system is to process the message and post whatever it contains to its own database. For these cases, HL7 provides the ACK message type, which contains no new application data, but allows the receiver to inform the initiator that the message has been received and processed successfully. In case of an error that prevents successful processing, optional parts of the ACK message allow this to be communicated as well.

For exchanges between GRITS and outside systems, it is the responsibility of the outside system to initiate the transfer of the first file, containing ADT and/or VXU messages with client and immunization data. After processing those messages, GRITS responds with a file of ACK messages. At the same time or soon thereafter, GRITS also creates another file of ADT and VXU messages to send to the Provider Organization that initiated the transfer. It is the responsibility of that Organization as receiver to transmit back a file of ACK messages. During this second exchange, in terms used by HL7, GRITS is the initiator and the outside system is the respondent. However, it is the receipt of the first file initiated by the outside system that causes GRITS to initiate sending its own data file.

| | Provider Organization | GRITS |
|-----|--|---|
| 1. | Creates a file of client and immunization records that have changed since they were last transmitted to GRITS. | |
| 2. | Transmits the file to GRITS. | |
| 3. | | Processes the file received, creates a file of ACK messages. |
| 4. | | Transmits the ACK file back to the initiator of the original file. |
| 5. | Processes the ACK file to confirm success of the file transmission. | |
| 6. | | Creates a file of client and immunization records that have changed since they were last transmitted to this Provider Organization. |
| 7. | | Transmits the file to the Provider Organization. |
| 8. | Processes the file received, creates a file of ACK messages. | |
| 9. | Transmits the ACK file to GRITS | |
| 10. | | Processes the ACK file to confirm success of the file transmission. |

The 15th field in the MSH message header segment allows the initiator to ask that the message be acknowledged only in case of an error, and GRITS suggests this choice to minimize the number of ACK messages transmitted. In this case the ACK file contains only error messages (an optional form of the ACK message type), and the original messages with no answering error messages are implicitly acknowledged as successfully processed. If all messages in a batch are successful, the answering ACK file may contain only file and batch headers and footers, with no actual ACK messages. In Step 1 in the above table, it is permissible for a Provider Organization to send a file containing only file and batch headers and footers as a way of triggering the file GRITS creates in Step 6. It is also possible for the file GRITS creates in Step 6 to contain only file and batch headers and footers, if there are no records selected to send.

Examples

To illustrate how a GRITS HL7 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 | | |
| Chart Number for Peach Pediatrics | CHRT101 | 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 | F | PID-8 |
| Social Security Number | 111223333 | PID-19 |
| Multiple Birth Indicator | Y (client born as part of a multiple birth) | PID-24 |
| Birth Order | 2 (second birth of a multiple birth) | PID-25 |
| PD1 segment | | |
| Publicity Code | 02 (immunization reminders allowed) | PD1-11 |
| Protection Indicator | Y (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 | | |
| Responsible Person Name #1 | Jain Smith | NK1-2 |
| Relationship to client | Mother (MTH) | NK1-3 |
| Address | 123 PEACH ST ATLANTA, GA 53000, GA121 | NK1-4 |
| Email | jsmith@email.com | NK1-4 |
| Phone | (555) 444-3333 ext. 4321 | NK1-5 |
| Responsible Person Name #2 | John J. Smith, Sr. | NK1-2 |
| Relationship to client | Father (FTH) | NK1-3 |
| PV1 segment | | |
| Eligibility for State-Supplied Vaccine | Medicaid (V02) | PV1-20 |
| Eligibility Effective Date | September 01, 2004 | PV1-20 |

Demographic Update only:

```
MSH|^~&||PCHPD||GRITS|20040930||ADT^A31|376663730|P|2.4||AA<CR>
PID|||111223333^^^SS^~CHRT101^^^PI^||SMITH^JOHN^JO^JR|DOE^JAIN|20040930|M|||||||||Y|2<CR>
PD1|||||||02^Yes reminder/recall - any method^HL70215|Y|20040913|||A|20040917|20040918
NK1|1|SMITH^JAIN^^|MTH^Mother^HL70063|111 My Ave^Apt B^Atlanta^GA^54321^^H^^GA067
|^PRN^^jsmith@email.com^^555^4443333^4321^<CR>
NK1|2|SMITH^JOHN^J^SR|FTH^Father^HL70063<CR>
PV1||R||||||||||V02^20040901<CR>
```

In the example above, Peach Pediatrics sends a HL7 version 2.4 message to GRITS. The message is not bracketed by file or batch header segments. GRITS will accept HL7 version 2.4 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, telephone and e-mail address listed. The PV1 segment indicates John's client eligibility for State-Supplied vaccine and the effective date.

Client #2 & 3

| Information Type | Value to Transmit | HL7 Field |
|--|---|------------------|
| PID segment | | |
| GRITS Client ID (Peach Pediatrics received this as the SR– State Registry # in an earlier transmission from GRITS in PID-3) | 2221040 | PID-2 |
| Chart Number for Peach Pediatrics | CHRT102 | PID-3 |
| Name | Nicole Hansen | PID-5 |
| Mother's maiden name | Julia Hansen | PID-6 |
| Birth date | April 2, 1993 | PID-7 |
| Sex | F | PID-8 |
| PV1 segment | | |
| Eligibility for State-Supplied Vaccine | Insured – vaccines covered (V01) | PV1-20 |
| Eligibility Effective Date | July 23, 2003 | PV1-20 |
| RXA segment #1 | | |
| Date administered | April 01, 1999 | RXA-3 |
| Vaccine | Influenza | RXA-5 |
| CVX Code | 16 | RXA-5 |
| Dose (ml) | 0.25 | RXA-6 |
| Administration Notes | Historical (00) | RXA-9 |
| Administered-at location | Test Site | RXA-11 |
| RXA segment #2 | | |
| Date administered | February 13, 2003 | RXA-3 |
| Vaccine | DTP/aP | RXA-5 |
| CPT Code | 90700 | RXA-5 |
| Dose (ml) | 0.5 | RXA-6 |
| Administration Notes | New (00) | RXA-9 |
| Administered-at location | Test Site 2 | RXA-11 |
| Lot number | lot111b | RXA-15 |
| Manufacturer name | Abbott Laboratories | RXA-17 |
| RXA segment #3 | | |
| | | RXA segment |
| Date administered | July 23, 2003 | RXA-3 |
| Vaccine | Hepatitis B | RXA-5 |
| Dose (ml) | Unknown (0) | RXA-6 |
| Administration Notes | Historical (00) | RXA-9 |
| Action Code-RXA | Delete record (D) | RXA-21 |
| Information Type | Value to Transmit | HL7 Field |
| PID segment | | |
| Chart Number for Peach Pediatrics | CHRT103 | PID-3 |
| Name | KIRSTEN MUELLER | PID-5 |
| Mother's maiden name | | PID-6 |
| Birth date | May 28, 2000 | PID-7 |
| Sex | F | PID-8 |
| PV1 segment | | |
| Eligibility for State-Supplied Vaccine 1 | V05 | PV1-20 |
| Eligibility Effective Date | Null (<i>will default to most recent date administered</i>) | PV1-20 |
| RXA segment #1 | | |
| Date administered | May 28, 2000 | RXA-3 |
| Vaccine | HEPB | RXA-5 |
| Dose (ml) | 0.5 | RXA-6 |
| OBX segment | | |
| Reaction to vaccine | Reaction (31044-1) | OBX-3 |
| Type | Anaphylaxis within 24 hours (10) | OBX-5 |


```

FHS|^~\&|PCHPD||GRITS|20040930||FILENM|File Text|20<CR>
BHS|^~\&|PCHPD||GRITS|20040930||Batch Text|1<CR>
MSH|^~\&|PCHPD||GRITS|20040930||VXU^V04|test002|P|2.4|||ER<CR>
PID||2221040|CHRT102^^^^PI^||HANSEN^NICOLE|HANSEN^JULIA|19930402|F<CR>
PV1||R|||||||||||||V02^19990401~ V01^20030723<CR>
RXA|0|999|19990401|19990401|16^INFLUENZA^CVX^^^|0.25|||01||^4321&Test Site|<CR>
RXA|0|999|20030213|20030213|^^^90700^DTP/AP^C4|0.5|||00||^2345&GRITS Site||lot111b|| AB^Abbott^MVX^^^<CR>
RXA|0|999|20030723|20030723|^^^HPB^HEPATITS B^WVGC|0||01|||||||D<CR>
MSH|^~\&|PCHPD||GRITS|20040930||VXU^V04|test003|P|2.4|||ER<CR>
PID||CHRT103^^^^PI^||MUELLER^KRISTIN||20000528|F<CR>
PV1||R|||||||||||||V05<CR>
RXA|0|999|20000528|20000528|^^^HEPB^HEPATITIS B^WVGC|0.5<CR>
OBX|1|CE|31044-1^Reaction^LN||10^Anaphylaxis within 24 hours^NIP|||||F<CR>
BTS|2<CR>
FTS|1<CR>

```

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

The first message for Nicole Hansen contains a GRITS client ID in field PID-2. This must have been transmitted earlier from GRITS to the GRITS Physicians' system. In this case it is legitimate to omit more of the optional PID fields, since GRITS must have the minimum required information for these clients to create a record. However, if there is a possibility that there is new or changed information to send to GRITS, these fields should be present, and it does no harm to repeat fields even if they have been transmitted previously. The message also consists of RXA segments for three immunizations. The first immunization is a historical Influenza immunization administered by Test Site. The second immunization is a new immunization administered by GRITS Site. A lot number and manufacturer was also specified. The third immunization, a historical Hepatitis B immunization is an immunization Delete transaction.

The second client, Kristin Mueller, has one Hepatitis B immunization. An OBX segment contains a Reaction of 'Anaphylaxis within 24 hours', which is associated with the immunization.

Response File

```

FHS|^~\&|GRITS|GRITS|||20041013075706||5499.12069.36.2004.10.13|||||
BHS|^~\&|GRITS|GRITS|||20041013075706||5499.12069.36.2004.10.13|||||
MSH|^~\&|GRITS|GRITS|||20041013075706||ACK|test002|P|2.4
MSH|^~\&|GRITS|GRITS|||20041013075706||ACK|test003|P|2.4
BTS|2
FTS|1

```

GRITS answers the file from the above example with a file of ACK messages. No MSA and ERR segments are present indicating the file processed successfully. An MSH segment is created for each message in the batch file – Message control ID test002 and test003.

Response File with Errors

A response file for a batch file that did not process normally is listed below. Message control ID test004 contained an invalid or missing eligibility code that is mandatory for new immunizations. Because this is an error in the GRITS business rules, no ERR segment is generated. The second response message for test005 indicates an invalid administered amount was in the message. This error will not cause the immunization to be rejected, so it is considered an informational error. Because Administered Amount value violated a data type standard set by HL7 (not GRITS), the ERR segment displays the location of the error. The error is in the RXA segment, on line 12 of the incoming file, field (component) 6. Because RXA-6 contains no sub-components, GRITS defaults the last portion of the ERR segment to 0.

```

FHS|^~\&|GRITS|GRITS|||20041013075122||5496.12059.36.2004.10.13|||||
BHS|^~\&|GRITS|GRITS|||20041013075122||5496.12059.36.2004.10.13|||||
MSH|^~\&|GRITS|GRITS|||20041013075122||ACK|test004|P|2.4
MSA|AR|test004|Immunization Record Rejected. Eligibility code missing or invalid for a new immunization.
MSH|^~\&|GRITS|GRITS|||20041013075122||ACK|test005|P|2.4
MSA|AR|test005|INFORMATIONAL ERROR - Invalid immunization INVALID ADMINISTERED AMOUNT.
ERR|RXA^12^6^0
BTS|2
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-2 if known. Outside systems are encouraged to store GRITS' client ID, and use it in PID-2 when sending to GRITS. 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.

HL7 – Real-time Processing

“Real-time” processing refers to the ability to transmit an HL7 2.4 formatted ADT^A31 Message (Update Patient Information, Demographic Only), VXQ^V01 Message (Query for Vaccination Record) and a VXU^V04 Message (Unsolicited Vaccination Update) and receive from GRITS the resulting HL7 2.4 Response Message in real time. A provider organization will query a registry to get information on a certain client (i.e. send an HL7 2.4 VXQ^V01 message) and will receive an HL7 2.4 Message Response (i.e. VXR^V03, VXX^V02, ACK or QAK) to that query in real time.

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 health information over the Internet to the Public Health Information Network Messaging System (PHINMS) Message Receiver. The CDC provides, free of charge, their PHINMS client Message Sender for communication with their PHINMS Message Receiver. Alternatively, providers may choose to develop their own ebXML Message Sender to communicate with the PHINMS Message Receiver.
2. The provider organization will submit a text file containing HL7 2.4 formatted ADT^A31, VXQ^V01 and 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. GRITS will process the Messages and send back via the PHINMS Message Receiver a file of HL7 2.4 formatted Response Messages, one per associated query (VXQ) or vaccination update (VXU) request.
3. GRITS will provide limited assistance to the provider organization to obtain, install and configure an ebXML client Message Sender for sending the HL7 2.4 formatted Message Requests and receiving the resulting HL7 2.4 formatted Message Response file generated by GRITS, although it is the provider organizations ultimate responsibility.
4. The provider organization will need to obtain from GRITS a CPA (Collaboration Protocol Agreement) for access to the GRITS Real-time system.
5. The provider organization will need to obtain the GRITS SSL certificate for secure access. See Appendix C (Obtaining the GRITS SSL Certificate) for detailed instructions. Please note: your certificate must be renewed annually. You will need to repeat the procedure detailed in Appendix C on an annual basis.

****GRITS will provide limited assistance for installation, configuration, and technical support for the ebXML Client Message Sender; however, the Center of Disease Control provides ultimate technical support.**

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

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.

Real-time message types

The following section outlines the various message types that are involved in real-time processing.

Provider Organizations may send the following message types to GRITS:

| <u>ADT^A31</u> | <u>Update Patient Information</u> |
|----------------|-----------------------------------|
| MSH | Message Header |
| PID | Patient Identification |
| [*PD1] | Patient Additional Demographic |
| [[NK1]] | Next of Kin/Associated Parties |
| PV1 | Patient Visit |
| [[**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

| | |
|---------|---|
| MSH | Message Header |
| PID | Patient Identification |
| [PD1] | Patient Additional Demographic |
| [[NK1]] | Next of Kin/Associated Parties |
| [PV1] | Patient Visit |
| {RXA} | Pharmacy Administration (At least ONE RXA is REQUIRED by HL7) |
| [RXR] | Pharmacy Route (Only one RXR per RXA segment) |
| [[OBX]] | Observation/Result |

Unsolicited Vaccination Update**VXQ^V01**

| | |
|-----|--|
| MSH | Message Header |
| QRD | Query Definition |
| QRF | Query Filter (GRITS has made this segment MANDATORY) |

Query for Vaccination Record

GRITS may send the following message types to a Provider Organization:

VXR^V03

| | |
|---------|--|
| MSH | Message Header |
| MSA | Message Acknowledgment |
| QRD | Query Definition |
| QRF | Query Filter (GRITS has made this segment MANDATORY) |
| PID | Patient Identification |
| [PD1] | Patient Additional Demographic |
| [[NK1]] | Next of Kin/Associated Parties |
| [PV1] | Patient Visit |
| { RXA | Pharmacy Administration |
| [RXR] | Pharmacy Route |
| [[OBX]] | Observation/Result (Contraindications, Reactions, or Vaccine Adverse Event Outcomes) |
| } | |
| [[OBX]] | Observation/Result (Vaccines Due Next) |

Response TO Vaccination Query Returning the Vaccination Record**VXX^V02**

| | |
|---------|--|
| MSH | Message Header |
| MSA | Message Acknowledgment |
| QRD | Query Definition |
| QRF | Query Filter (GRITS has made this segment MANDATORY) |
| { PID | Patient Identification (One per matching client) |
| [[NK1]] | Next of Kin Segment |
| } | |

Response TO Vaccination Query (Returning Multiple PID Matches)**ACK**

| | |
|-------|------------------------|
| MSH | Message Header |
| MSA | Message Acknowledgment |
| [ERR] | Error |

General Acknowledgment**QCK**

| | |
|-------|------------------------|
| MSH | Message Header |
| MSA | Message Acknowledgment |
| [ERR] | Error |
| [QAK] | Query Acknowledgment |

Query General Acknowledgment

Page 2-3 of this document outlines the rules/specifications needed to construct a 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.

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, the field separators maintain the ordinal position of the fourth field: |field1|||field4.

MSH – Message Header Segment

For ADT, VXU and VXQ message types, the MSH segment must be constructed according to normal HL7 format specifications. (MSH specifications are listed previously in 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.

ADT^A31 – 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 PV1 message segment is MANDATORY in an ADT message. The ADT message must be received in the HL7 2.4 format; GRITS does not support prior HL7 versions for Real-time processing. GRITS validates the version by reading the MSH-12 field. The ADT message must contain |2.4^^| in MSH-12.

To indicate the client status is Inactive, the PD1-16 field must be populated with a value of “I”. Below is an example of a Inactive PD1 segment.

```
PD1|||||||||01^No Reminder/Recal|||||||||
```

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 batch processing specifications listed previously in this document. For new immunizations, the PV1 message segment is MANDATORY in a VXU message. A VXU message must be received in the HL7 2.4 format; GRITS does not support prior HL7 versions for Real-time processing. GRITS validates the version by reading the MSH-12 field. A VXU message must contain |2.4^^| in MSH-12.

Immunization deletions can be submitted for both batch HL7 2.4 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.

```
RXA|0|999|20040906|20040906|^^^90718^Td^C4|0|||01^^^^^|^^^1208&Test Site|||||D|
```

VXQ^V01 – Query for Vaccination Record

When a health care provider (participating in an immunization registry) needs to obtain a complete patient vaccination record, a VXQ (query) is sent to the immunization registry for the definitive (last updated) immunization record. The three segments that make up a VXQ message are the MSH (message header), QRD (query definition) and QRF (query filter). For a VXQ message, the MSH-09 field must contain |VXQ^V01| and the segments must be in the following sequence order:

```
MSH|^~\&|QUERYINGORG|QUERYINGORG|GRITS|GRITS|200409301200||VXQ^V01|test001|P^|2.4|||ER
QRD|20040930|R|||test001|||25^RD|01^SMITH^JOHN^J^JR|VXI^VACCINE INFORMATION^HL700048^SIIS|20
QRF|test001|||256946789~20040901~MA~MA99999999~88888888~SMITH^JANE^LEE~DOE~898666725~SMITH^JOHN^JO~822
546618|
```

The QRD and QRF segments are outlined in detail below.

QRD – Query Definition Segment

Used to define a query.

| SEQ | LEN | DT | R/O | RP/# | TBL# | ELEMENT NAME |
|-----|-----|-----|-----|------|------|---------------------------|
| 1 | 26 | TS | R | | | Query date/time |
| 2 | 1 | ID | R | | 0106 | Query Format Code |
| 3 | 1 | ID | R | | 0091 | Query Priority |
| 4 | 10 | ST | R | | | Query ID |
| 7 | 10 | CQ | R | | 0126 | Quantity limited request |
| 8 | 60 | XCN | R | Y | | Who subject filter |
| 9 | 60 | CE | R | Y | 0048 | What subject filter |
| 10 | 60 | CE | R | Y | | What department data code |
| 12 | 1 | ID | O | | 0108 | Query results level |

Field Notes:

QRD-1 Date the query was generated by the application program. Format is YYYYMMDD.

QRD-2 See Table 0106. The Query format code to be used in GRITS is **R** for Record-oriented.

QRD-3 See Table 0091. Time frame in which the response is expected. The Query Priority to be used in GRITS is **I** for Immediate.

QRD-4 Unique identifier for the query. Assigned by the querying application. This field is returned intact by GRITS in a response (VXR or VXX).

QRD-7 See Table 0126. Maximum length of the response that can be accepted by the requesting system. Valid responses are numerical values specified in the first sub-component followed by units specified in the second sub-component (i.e. |5^ARD|). The Quantity limited request unit to be used in GRITS is **RD** for Records. A null/invalid value in either sub-component results in message rejection. GRITS will interpret the units as the maximum number of client MATCHES to be returned via a VXX response message.

*Note: GRITS will return a maximum of 10 records per query message submitted. “0” (zero) and any number 10 or greater will result in a maximum of 10 matches returned by GRITS.

QRD-8 Identifies the subject of the query or whom the inquiry is about. The XCN data type is used; the 2nd and 3rd components (family name and given name) are MANDATORY in GRITS. GRITS supports repetition of this field. GRITS will process each name in the order received until a match is found; the rest will be ignored.

QRD-9 See Table 0048. Describes the kind of information required to satisfy the request. The What subject filter to be used in GRITS is **VXI** for Vaccine Information. GRITS supports repetition of this field. If the field repeats at least one value must be “VXI”.

QRD-10 The What department data code to be used in GRITS is **SIIS** for State Immunization Information Systems. GRITS supports repetition of this field. A null value results in message rejection.

QRD-12 Used to control level of detail in results. This field is optional and will be populated by GRITS with the total count of PID matches found in GRITS when a Query results in a VXX Response Message.

Example:

QRD|20040930|R|||test001|||5^ARD|^SMITH^JOHN^J^JR|VXI^VACCINE INFORMATION^HL700048^^^|SIIS||20

QRF – Query Filter Segment (MANDATORY in GRITS)

Used with the QRD segment to further refine the content of a query.

| SEQ | LEN | DT | R/O | RP/# | TBL# | ELEMENT NAME |
|-----|-----|----|-----|------|------|----------------------------|
| 1 | 20 | ST | R | Y | | Where subject filter |
| 2 | 26 | TS | O | | | When data start date/time |
| 3 | 26 | TS | O | | | When data end date/time |
| 4 | 60 | ST | O | Y | | What user qualifier |
| 5 | 60 | ST | M | | | Other query subject filter |

Field Notes:

QRF-01 Identifies the department, system or subsystem to which the query pertains. A null value results in message rejection.

QRF-05 This field is used by registries to transmit up to ten separate search “keys”. This field is MANDATORY in GRITS. GRITS does NOT support repetition. The 2nd component (patient date of birth) is minimally required by GRITS. Format is

YYYYMMDD. For patient identification, GRITS also processes the mother’s first name and maiden name, which are found in this component.

The “keys” within QRF-5 are order and separated by the repeat delimiter “~”. If a “key” has no value, it is left empty with the repeat delimiter holding its place. Order of data “keys” is as follows:

<patient Social Security number>~<patient birth date>~<patient birth state>~<patient birth registration number>~<patient Medicaid number>~<mother's name Last^First^Middle>~<mother's maiden name>~<mother's Social Security number>~<father's name>~<father's Social Security number>.

Example:

QRF|MA0000|||~20021230~GA~~~SMITH^JANE^LEE~DOE~~SMITH^JOHN^JO~|

VXR^V03 – Response TO Vaccination Query (Returning the Vaccination Record)

When a patient has been uniquely identified (there is only one “match” to the query), the response to the query is a VXR^V03 message that is generated and sent back to the querying organization. GRITS has imposed rules for when a VXR will be sent to the querying organization. Please see the following rules:

1. If an exact match is found in GRITS AND the client’s “Allow Sharing of Immunization Data” indicator is set to NO, then that client will **NOT** be returned to the requestor unless one of the statements below pertains:
 - The organization requesting the query is the Parent organization of a child organization owning the data **OR**
 - The organization requesting the query had originally set the “Allow Sharing” indicator to NO.
2. If an exact match is found in GRITS AND the client’s “Allow Sharing” indicator is set to NO (and none of the above rules apply), then a QCK response is sent instead of the VXR message.
3. If an exact match is found in GRITS AND the client has opted out of the registry, no immunizations will be returned.
4. GRITS will supply all vaccines administered, regardless of validity. GRITS determines validity according to CDC/ACIP schedule.

VXR Segment details

Several segments make up the VXR message type. The following segments have been outlined previously in this document and will follow the same formatting for the VXR message type.

MSH, MSA, QRD, QRF, PID, PD1, NK1, PV1, RXA, RXR, OBX (Observation/Result Contraindications or Reactions)

In addition to supplying the querying organization with client specific demographic and immunization data (contained in the above segments), the VXR message also specifies “Observation/Result Vaccines Due Next” information. This information is supplied by generating a minimum of 3 OBX segments per 1 vaccine recommendation. GRITS reports the Vaccination Schedule in the OBX segments through the specification of the LOINC code 30979-9 (Vaccines Due Next) and its sub-components in OBX-03. GRITS requires specification of OBX-05 when OBX-03 is specified and valid. Further, GRITS has superimposed a CE data type on the OBX-05 field. The corresponding observation values will be specified in OBX-05. Combinations are as follows:

| OBX-3 LOINC Code | OBX-5 | Description |
|------------------|-------------------------|--|
| 30979-9 | CVX | Vaccines due next |
| 30979-9&30980-7 | GRITS Recommended Date | Date vaccine due |
| 30979-9&30973-2 | GRITS Dose Number | Vaccines due next dose number |
| 30979-9&30981-5 | GRITS Earliest Date | Earliest date to give |
| 30979-9&30982-3 | GRITS Tracking Schedule | Reason applied by forecast logic to project this vaccine |

See table HL70292 Vaccines Due Next for CVX Code values returned by GRITS.

Below you'll find an example of what a recommendation might look like in a VXR message response (see **bolded** OBX's below).

```
MSH|^~\&|GRITS|GRITS|QUERYING ORG|QUERYING ORG|200409301200||VXR^V04|test001|P^|2.4|||ER
MSA|AA|test001|
QRD|20040930|R|||test001|||1^RD|^SMITH^JOHN^J^JR|VXI^VACCINE INFORMATION^HL700048|^SIIS||1|
ORF|test001|||~20040901~GA~SMITH^JANE^LEE~DOE~SMITH^JOHN^JO~
PID|||1234^^^SR^~CHRT101^^^PI^||SMITH^JOHN^JO^JR^^|20040901|M||2106-3^^^|121 MY AVE^Apt B^
ATLANTA^GA^30303^^H^^|^PRN^jsmith@email.com^^555^4443333^4321^|||||2186-5^^^|
PD1|||||01^^^|Y|||A
NK1|1|SMITH^JOHN^JO^JR^^|SEL^SELF^HL70063^^^|121 MY AVE^Apt B^ ATLANTA^GA^30303^^H^^
|^PRN^jsmith@email.com^^555^4443333^4321^
PV1|||||V02^20040901|
RXA|0|0|20070610|20070610|998^No Vaccine Administered^CVX|999|
OBX|1|CE|30979-9^Vaccines Due Next^LN^^^|1|107^DTaP-Unspecified^CVX^^^|F|
OBX|2|TS|30979-9&30980-7^Date Vaccine Due^LN^^^|1|20070810|||F|
OBX|3|NM|30979-9&30973-2^Vaccine due next dose number^LN^^^|1|1|||F|
OBX|4|TS|30979-9&30981-5^Earliest date to give^LN^^^|1|20070722|||F|
OBX|5|CE|30979-9&30982-3^Reason applied by forecast logic to project this vaccine^LN^^^|1|^ACIP schedule|||F|
```

VXX^V03 –Response TO Vaccination Query (Returning Multiple PID Matches)

When a health care provider participating in an immunization registry needs to obtain a complete patient vaccination record, a query (VXQ message) is sent to the immunization registry for the definitive (last updated) immunization record. When a query results in multiple patient matches, the VXX message response is generated. The VXX contains multiple clients and their demographic information but does not contain their vaccination information. The number of matches that GRITS generates is determined by the first component of the incoming VXQ (QRD-07 Quantity Limited request field). GRITS will interpret the quantity specified as the maximum number of client MATCHES to be returned via a VXX response message.

*Note: GRITS will return a maximum of 10 records per query message submitted. “0” (zero) and any number 10 or greater will result in a maximum of 10 matches returned by GRITS.

GRITS has imposed rules for when a VXX 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 statements below pertains:
 - The requestor is the Parent organization of the Child organization owning the data OR
 - 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.

The following scenarios outline when a VXX message will be sent back when multiple matches are found, but some of the matches have an “Allow Sharing” indicator of NO.

Scenario 1:

The following paragraph holds true, assuming that the VXQ sent “0” in QRD-07 (meaning the provider organization requests the maximum number of clients sent back).

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 VXX message. The remaining 8 clients (“Allow Sharing” = NO) will not be sent back. The QRD-12 field (in the VXX) will reflect the total number of matches found in GRITS (10 in our example) and the querying organization will need to assume that the 8 clients that were not returned had the “Allow Sharing” indicator set to NO.

Example:

VXQ

```
MSH|^~\&|QUERYING ORG|QUERYING ORG|GRITS|GRITS|200409061200||VXQ^V01|001|P^|2.4|||ER
QRD|20040120|R||01|||0^RD|^SMITH^JOHN^J^^|VXI^VACCINE INFORMATION^HL700048|^SIIS
QRF|ZZ000|||~20040906|
```

VXX

```
MSH|^~\&|GRITS|GRITS|QUERYING ORG|QUERYING ORG|200409061200||VXX^V02|001|P^|2.4|||ER
MSA|AA|001||0||0^Message Accepted^HL70357^^^
QRD|20040906|R||001|||0^RD^^^^^|^SMITH^JOHN^J^^|VXI^VACCINE INFORMATION^HL700048^^^|^SIIS^^^^^|10|
QRF|ZZ000|||~20040906~~~~~~
PID||123^^^^SR^~^^^^PI^||SMITH^JOHN^J^^^^^|20030906|M||2028-9^^^^^|2186-5^^^^^|
NK1|1|DOE^JOHN^^|SEL^SELF^HL70063^^^|123 MY STREET^^ATLANTA^GA^30303^^^^^|PN^^^^^1114444^^
PID||456^^^^SR^~^^^^PI^||SMITH^JON^^JR^^^^^|20040906| M||2028-9^^^^^|2186-5^^^^^|
```

Scenario 2:

If GRITS matches 2 clients and both have the “Allow Sharing” indicator set to NO, then a QCK is generated. The QCK message will be comprised of the MSH, MSA and QAK segments. The MSA-01 field will have a value of “AR” (Application Reject). The MSA-03 field will display a message similar to “Client has an Allow Sharing of Immunization Data indicator = No”. MSA-06 text will display, "Record not released".

Example:

VXQ

```
MSH|^~\&|QUERYING ORG|QUERYING ORG|GRITS|GRITS|200409301200||VXQ^V01|test007|P^|2.4|||ER
QRD|20040906|R||test007|0||0^RD|01^SMITH^JOHN^J^^|VXI^VACCINE INFORMATION^HL700048|^SIIS
QRF|ZZ000|||~19760707~|
```

QCK

```
MSH|^~\&|GRITS|GRITS|QUERYING ORG|QUERYING ORG|200409301200||QCK|test007|P^|2.4|||ER
MSA|AR|test007|Client has an Allow sharing of immunization data indicator = No|0||500^Record Not
Released^HL70357^^^|
QAK|test007|NF|
```

ACK – Acknowledgment Messages (with Errors)

ACK messages are generated for message rejections and for informational error messages. Three conditions that result in message rejection are:

1. Sequencing (i.e. The PID segment must follow the MSH segment).
2. Segment required fields contain no data.
3. Segment required fields contain invalid data.

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 the text does NOT include “Message Rejected”. The ACK contains the MSH, MSA and ERR segments.

The MSH, MSA, and ERR segments are all detailed previously in this document.

QCK – Query General Acknowledgment

A QCK message is generated when GRITS has processed the query message, but no match was found to the query parameters in the database. In the event an error occurs that does not preclude a query from being processed, an Error segment and a QAK – Query Acknowledgement segment will be created. The QCK contains the MSH, MSA and QCK segments, and on occasion the ERR segment.

The MSH, MSA, and ERR segments are all detailed previously in this document.

QAK – Query Acknowledgment Segment

| SEQ | LEN | DT | R/O | RP/# | TBL# | ELEMENT NAME |
|-----|-----|----|-----|------|------|-----------------------|
| 1 | 32 | ST | | | | Query Tag |
| 2 | 2 | ID | O | | 0208 | Query response status |

Field Notes:

QAK-1 This field is valued by the initiating system to identify the query and can be used to match response messages to the originating query. If it is valued, the responding system is required to echo it back as the first field in the QAK. GRITS uses the value specified in the QRD-04 field (of the VXQ) for the QAK-1 query tag value.

QAK-2 See Table 0208. Allows the responding system to return a precise response status. GRITS displays **NF** for No data found.

Example: QAK|01|NF|

QCK Example:

```
MSH|^~\&|GRITS|GRITS|QUERYING ORG|QUERYING ORG|200409301200||QCK^V02|test008|P^|2.4||ER
MSA|AA|test008||0||0^Message Accepted^HL70357^^^
QAK|test008|NF|
```

This concludes real-time processing.

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

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

Example:

|F-11380^CREATININE^I9^2148-5^CREATININE^LN|

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”.

CM - Composite

A field that is a combination of other meaningful data fields. Each portion is called a **component**. The specific components of CM fields are defined within the field descriptions. Certain other composites have been separately identified and are described below. **The CM data type is maintained strictly for backward compatibility and may not be used for the definition of new fields.** Wherever a component of an HL7 field is itself an HL7 data type which contains components, its delimiters are demoted by one. Thus a component designated as a CE data type should be encoded as <identifier & text & name of coding system> (see data type CE – Coded Element). Note that since HL7 delimiters are not recursive, an HL7 data type containing components cannot be a subcomponent. When this level of detail is needed, each component of the HL7 data type can be encoded as a separate subcomponent. For an example of this, see the encoding of the filler order number in the order-sequencing component of the Timing/Quantity data type.

CX – Extended Composite ID With Check Digit

GRITS uses this data type only for client identification in Patient Identification (PID) segments. See the field notes for values used for GRITS.

HD – Hierarchic Designator

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.

ID – Coded Value 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 Value 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.

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.

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 – Time Stamp

Format: YYYY[MM[DD[HHMM[SS[S[S[S[S]]]]]]][+/-ZZZ]^<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, L = 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 birthdate, 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 – 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)>

Example:

|1234 Easy St.^Ste. 123^San Francisco^CA^95123^USA^B^^SF^|

Street address (ST)

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)

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 and defined by *HL7 table 0190 - Address type*.

Other geographic designation (ST)

Other geographic designation includes country, bioregion, SMSA, etc.

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).

Allowable values: codes defined by government.

Census tract (IS)

A code that represents the census track in which the specified address resides. Refer to *user-defined table 0288 - Census tract*.

Allowable Values: codes defined by government.

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 (ST)

Last Name Prefix (ST)

Given name (ST)

Middle initial or name (ST)

Suffix (ST)

Used to specify a name suffix (Defined Values: JR, SR, I, II, III, IV, V, VI, VII, VIII, IX, X).

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

| 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)

Country code (NM)

Area/city code (NM)

Phone number (NM)

Extension (NM)

Any text (ST)

Appendix B -- HL7 Tables

The following tables provide valid values for fields defined in the segments above, in the cases where the field definitions reference a 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 |
|-------------|-------------|----------------------------|---|--|
| User | 0001 | Sex | (use in PID-8) | |
| | 0001 | | F | Female |
| | 0001 | | M | Male |
| | 0001 | | U | Unknown |
| HL7 | 0003 | Event Type | (use in MSH-9, second component) | |
| | 0003 | | A31 | ADT/ACK - Update patient information |
| | 0003 | | V01 | VXQ - Query for vaccination record |
| | 0003 | | V02 | VXX - Response to vaccination query returning multiple PID matches |
| | 0003 | | V03 | VXU - Vaccination record response |
| | 0003 | | V04 | VXU - Unsolicited vaccination record update |
| User | 0004 | Patient class | (use in PV1-2) | |
| | 0004 | | R | Recurring Patient |
| User | 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 | | U | Unknown |
| HL7 | 0008 | Acknowledgment Code | (find in MSA-1) | |
| | 0008 | | AA | Application Accept |
| | 0008 | | AR | Application Reject |
| User | 0048 | What subject filter | (use in QRD-9) | |
| | 0048 | | VXI | Vaccine Information |
| 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 |
| | 0063 | | OTH | Other |
| | 0063 | | OWN | Owner |
| | 0063 | | PAR | Parent |

| Type | Table | Name | Value | Description |
|------------|-------------|---|---|--|
| | 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 | (use in PV1-20) | |
| | 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/Alaska Native |
| | 0064 | | V05 | Insured – No Vaccines/Underinsured |
| | 0064 | | V06 | PeachCare |
| | 0064 | | V07 | COVID Specific |
| HL7 | 0076 | Message Type | (use in MSH-9, first component) | |
| | 0076 | | ACK | General acknowledgment |
| | 0076 | | ADT | ADT message |
| | 0076 | | QCK | Query general acknowledgment |
| | 0076 | | VXQ | Query for vaccination record |
| | 0076 | | VXX | Vaccination query response with multiple PID matches |
| | 0076 | | VXR | Vaccination query record response |
| | 0076 | | VXU | Unsolicited vaccination record update |
| HL7 | 0085 | Observation result status codes | (use in OBX-11) | |
| | 0085 | | F | Final results |
| HL7 | 0091 | Query priority | (use in QRD-3) | |
| | 0091 | | I | Immediate |
| HL7 | 0103 | Processing ID | (use in MSA-11, first component) | |
| | 0103 | | P | Production |
| HL7 | 0104 | Version ID | (use in MSH-12) | |
| | 0104 | | 2.3.1 | Release 2.3.1 1999 |
| | 0104 | | 2.4 | Release 2.4 2000 |
| HL7 | 0106 | Query/Response format code | (use in QRD-2) | |
| | 0106 | | R | Response is in record-oriented format |
| HL7 | 0126 | Quantity limited request | (use in QRD-7) | |
| | 0126 | | RD | Records |
| HL7 | 0136 | Yes/No Indicator | (use in PID-24, PD1-12) | |
| | 0136 | | Y | Yes |
| | 0136 | | N | No |
| HL7 | 0155 | Accept/Application Acknowledgment Conditions | (use in MSH-15) | |
| | 0155 | | ER | Error/Reject conditions only |
| HL7 | 0162 | Route of administration | (use in RXR-1) | |
| | 0162 | | ID | Intradermal |
| | 0162 | | IM | Intramuscular |
| | 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 |

| Type | Table | Name | Value | Description |
|-------------|-------------|---|--|--|
| | 0163 | | LD | Left Deltoid |
| | 0163 | | LG | Left Gluteous Medius |
| | 0163 | | LVL | Left Vastus Lateralis |
| | 0163 | | LLFA | Left Lower Forearm |
| | 0163 | | RA | Right Arm |
| | 0163 | | RT | Right Thigh |
| | 0163 | | RVL | Right Vastus Lateralis |
| | 0163 | | RG | Right Gluteous Medius |
| | 0163 | | RD | Right Deltoid |
| | 0163 | | RLFA | Right Lower Forearm |
| User | 0189 | Ethnic Group | (use in PID-22) | |
| | 0189 | | H | Hispanic |
| | 0189 | | N | Non-Hispanic |
| | 0189 | | U | Unknown |
| User | 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 |
| User | 0203 | Identifier type | (use in PID-2, 3) | |
| | 0203 | | MA | Medicaid Number |
| | 0203 | | MC | Medicare Number |
| | 0203 | | PI | Patient Internal Identifier |
| | 0203 | | PN | Person Number |
| | 0203 | | PRN | Provider Number |
| | 0203 | | PT | Patient Number |
| | 0203 | | SS | Social Security Number |
| User | 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) |
| User | 0208 | Query response status | (find in QAK-2) | |
| | 0208 | | NF | No data found, no errors |
| User | 0212 | Nationality | (use in PID-11; NK1-4) | |
| | 0212 | | CA | Canada |
| | 0212 | | US | United States of America |
| User | 0215 | Publicity Code | (use in PD1-11) | |
| | 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] |

| Type | Table | Name | Value | Description |
|------|-------|------|-------|---|
| | 0227 | | AVI | Aviron |
| | 0227 | | BA | Baxter Healthcare Corporation [Inactive- use BAH] |
| | 0227 | | BAH | Baxter Healthcare Corporation <i>(includes Hyland Immuno, Immuno International AG, and North American Vaccine, Inc.)</i> |
| | 0227 | | BAY | Bayer <i>(includes Miles, Inc., and Cutter Laboratories)</i> |
| | 0227 | | BP | Berna Products [Inactive- use BPC] |
| | 0227 | | BPC | Berna Products Corporation <i>(includes Swiss Serum And Vaccine Institute Berne)</i> |
| | 0227 | | MIP | Bioport Corporation <i>(formerly Michigan Biologic Products Institute)</i> |
| | 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] <i>(includes PowderJect Pharmaceuticals, Celltech Medeva Vaccines and Evans Medical Limited)</i> |
| | 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 <i>(formerly SmithKline Beecham; includes SmithKline Beecham and Glaxo Wellcome)</i> |
| | 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 <i>(formerly Massachusetts Public Health Biologic Laboratories)</i> |
| | 0227 | | MA | Massachusetts Public Health Biologic Laboratories [Inactive-use MBL] |
| | 0227 | | MED | MedImmune, LLC |
| | 0227 | | MSD | Merck & Co., Inc. |
| | 0227 | | MOD | Moderna US, Inc. |
| | 0227 | | IM | Merieux [Inactive-use PMC] |
| | 0227 | | MIL | Miles [Inactive-use BAY] |
| | 0227 | | NAB | NABI <i>(formerly North American Biologicals, Inc.)</i> |
| | 0227 | | NYB | New York Blood Center |
| | 0227 | | NAV | North American Vaccine, Inc. [Inactive-use BAH] |
| | 0227 | | NOV | Novartis Pharmaceutical Corporation <i>(includes Chiron, Powderject Pharmaceuticals, Celltech Medeva Vaccines and Evans Limited, Ciba-Geigy Limited and Sandoz Limited)</i> |
| | 0227 | | NVX | Novavax, Inc. |
| | 0227 | | OTC | Organon Teknika Corporation |
| | 0227 | | ORT | Ortho-clinical Diagnostics <i>(formerly Ortho Diagnostic Systems, Inc.)</i> |
| | 0227 | | PD | Parkedale Pharmaceuticals <i>(formerly Parke-Davis)</i> |
| | 0227 | | PWJ | Powerject Pharmaceuticals <i>(includes Celltech Medeva Vaccines and Evans Medical Limited)</i> [Inactive- use NOV] |
| | 0227 | | PRX | Praxis Biologics [Inactive- use WAL] |
| | 0227 | | JPN | Research Foundation for Microbial Diseases of Osaka University (BIKEN) |
| | 0227 | | PAX | PaxVax |
| | 0227 | | PSC | Protein Sciences Corporation |

| Type | Table | Name | Value | Description |
|-------------|-------------|-------------------------------------|-------------------------------|--|
| | 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 | | USA | United States Army Medical Research and Material Command |
| | 0227 | | WA | Wyeth-Ayerst [Inactive- use WAL] |
| | 0227 | | WAL | Wyeth-Ayerst (includes Wyeth-Lederle Vaccines and Pediatrics, Wyeth Laboratories, Lederle Laboratories, 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 |
| User | 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 |
| | 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 |

| Type | Table | Name | Value | Description |
|------|-------|------|-------|-------------|
| | 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 |
| | 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 |

| Type | Table | Name | Value | Description |
|------|-------|------|-------|-------------|
| | 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 |
| | 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 |

| Type | Table | Name | Value | Description |
|------------|-------------|---|-----------------------|---|
| | 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) | |
| | 0292 | | 54 | Adenovirus, type 4 |
| | 0292 | | 55 | Adenovirus, type 7 |
| | 0292 | | 82 | Adenovirus-Unspecified |
| | 0292 | | 24 | Anthrax |
| | 0292 | | 19 | BCG |
| | 0292 | | 26 | Cholera |
| | 0292 | | 29 | CMVIG |
| | 0292 | | 207 | COVID-19, mRNA, LNP-S, PF, 100 mcg/0.5 mL |
| | 0292 | | 208 | COVID-19, mRNA, LNP-S, PF, 30 mcg/0.3 mL |
| | 0292 | | 213 | COVID-19, unspecified formulation |
| | 0292 | | 212 | COVID-19, vector-nr, rS-Ad26, PF, 0.5 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 | | 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 trivalent, pres free |
| | 0292 | | 149 | FLU-LAIV4 |
| | 0292 | | 150 | FLU, injectable, quadrivalent, pres free |
| | 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 |

| Type | Table | Name | Value | Description |
|------|-------|------|-------|---|
| | 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 | | 08 | Hep B, adolescent or pediatric |
| | 0292 | | 42 | Hep B, adolescent/high risk infant |
| | 0292 | | 43 | Hep B, adult |
| | 0292 | | 189 | HepB-CpG |
| | 0292 | | 44 | Hep B, dialysis |
| | 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 | | 32 | Meningococcal, poly |
| | 0292 | | 103 | Meningococcal C conjugate |
| | 0292 | | 114 | Meningococcal-MCV4P |
| | 0292 | | 136 | Meningococcal-MCV4O |
| | 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 |

| Type | Table | Name | Value | Description |
|----------------------|--------------------|---|--|---------------------------------------|
| | 0292 | | 23 | Plague |
| | 0292 | | 11 | Pertussis |
| | 0292 | | 100 | Pneumococcal conjugate 7 |
| | 0292 | | 133 | Pneumococcal conjugate 13 |
| | 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-tetavalent, live |
| | 0292 | | 122 | Rotavirus-Unspecified |
| | 0292 | | 71 | RSV-IGIV |
| | 0292 | | 93 | RSV-Mab |
| | 0292 | | 06 | Rubella |
| | 0292 | | 38 | Rubella-Mumps |
| | 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 |
| | 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 | | 187 | Zoster Subunit |
| | 0292 | | 188 | Zoster unspecified formulation |
| HL7 GRITS | 0292 C4 | Vaccines Due Next (CVX code=CVX) & (CPT code=C4) | (Registry uses in OBX-5 for VXR messages) | |
| | 0292 | | 82 | Adenovirus-Unspecified |
| | 0292 C4 | | 24 90581 | Anthrax |
| | 0292 | | 19 | BCG |
| | 0292 C4 | | 174 90625 | cholera, live attenuated |

| Type | Table | Name | Value | Description |
|------------|-------------|--------------------|------------------------|---|
| | 0292 C4 | | 26 90725 | cholera, unspecified formulation |
| | 0292 C4 | | 207 91301 | COVID-19, mRNA, LNP-S, PF, 100 mcg/0.5 mL |
| | 0292 C4 | | 208 91300 | COVID-19, mRNA, LNP-S, PF, 30 mcg/0.3 mL |
| | C4 | | 213 | COVID-19, unspecified formulation |
| | 0292 C4 | | 212 91303 | COVID-19, vector-nr, rS-Ad26, PF, 0.5 mL |
| | 0292 | | 90719 | Diphtheria |
| | 0292 | | 107 | DTAP-Unspecified |
| | 0292 | | 88 | FLU-Unspecified |
| | 0292 | | 85 | Hep A-Unspecified |
| | 0292 | | 45 | Hep B-Unspecified |
| | 0292 C4 | | 189 90739 | Hep B, adult, 2-dose |
| | 0292 | | 17 | Hib-Unspecified |
| | 0292 C4 | | 118 90650 | Human Papillomavirus-bivalent |
| | 0292 C4 | | 62 90649 | Human Papillomavirus-quadrivalent |
| | 0292 | | 14 | IG-Unspecified |
| | 0292 C4 | | 39 90735 | Japanese Enceph-SC |
| | 0292 C4 | | 134 90738 | Japanese Enceph-IM |
| | 0292 C4 | | 66 90665 | Lyme |
| | 0292 C4 | | 05 90705 | Measles |
| | 0292 | | 108 | Meningococcal-Unspecified |
| | 0292 C4 | | 07 90704 | Mumps |
| | 0292 | | 11 | Pertussis |
| | 0292 C4 | | 23 90727 | Plague |
| | 0292 | | 109 | Pneumococcal-Unspecified |
| | 0292 C4 | | 33 90732 | Pneumococcal 23 |
| | 0292 | | 89 | Polio-Unspecified |
| | 0292 | | 90 | Rabies-unspecified |
| | 0292 | | 122 | Rotavirus-Unspecified |
| | 0292 C4 | | 06 90706 | Rubella |
| | 0292 C4 | | 09 90718 | Td |
| | 0292 | | 112 | Tetanus-Unspecified |
| | 0292 | | 91 | Typhoid-Unspecified |
| | 0292 | | 75 | Vaccinia (Smallpox) |
| | 0292 C4 | | 21 90716 | Varicella |
| | 0292 C4 | | 37 90717 | Yellow Fever |
| | 0292 | | 188 | Zoster unspecified formulation |
| HL7 | 0323 | Action code | (use in RXA-21) | |
| | 0323 | | A | Add |

| Type | Table | Name | Value | Description |
|------------|---------------|---|------------------------|---|
| | 0323 | | D | Delete |
| | 0323 | | U | Update |
| HL7 | 0357 | Message error status codes | (find in ERR-1) | |
| | 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 |
| | 0441 | Immunization Registry Status | (use in PD1-16) | |
| | 0441 | | A | Active |
| | 0441 | | I | Inactive |
| | 0441 | | P | Permanently inactive - Deceased |
| NIP | NIP001 | Immunization Information Source | (use in RXA-9) | |
| | NIP001 | | 00 | New Immunization Record |
| | NIP001 | | 01 | Historical Information - source unspecified |
| | 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 |
| LN | NIP003 | Observation Identifiers | (use in OBX-3) | |
| | NIP003 | | 30945-0 | Vaccination contraindication/precaution |
| | NIP003 | | 31044-1 | Reaction |
| | NIP003 | | 30949-2 | Vaccination adverse event outcome |
| | NIP003 | | 30979-9 | Vaccines due next |
| | NIP003 | | 30980-7 | 30979-9&30980-7 – Date vaccine due |
| | NIP003 | | 30973-2 | 30979-9&30973-2 – Vaccine due next dose number |
| | NIP003 | | 30981-5 | 30979-9&30981-5 – Earliest date to give |
| | NIP003 | | 30982-3 | 30979-9&30982-3 – Reason applied by forecast logic to project this vaccine |
| 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) – MMR IPV VZU |
| | 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 | Gullain-Barre syndrome (GBS) within 6 weeks after DTP/DTaP |
| | 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 | IG received |
| | 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) |

| Type | Table | Name | Value | Description |
|--------------|---------------|----------------------------------|------------------------|--|
| | 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 | | E | Required emergency room/doctor visit |
| | NIP005 | | H | Required hospitalization |
| | NIP005 | | J | Resulted in permanent disability |
| | NIP005 | | L | Life threatening illness |
| | NIP005 | | P | Resulted in prolongation of hospitalization |
| | GRITS | | G1 | Unspecified Reaction indicated on file |
| 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 | Flu H1N1-09 |
| | WVGC | | H5N1 flu | H5N1 flu |
| | WVGC | | HBIG | HBIG |
| | WVGC | | HepA | Hepatitis A |
| | WVGC | | HepB | Hepatitis B |
| | WVGC | | Hib | Hib |
| | WVGC | | HPV | Human Papillomavirus |
| | WVGC | | HZ | Zoster |
| | WVGC | | Ig | Ig |
| | WVGC | | Influenza | Influenza |
| | WVGC | | Lyme | Lyme |
| | WVGC | | Measles | Measles Virus Vaccine |
| | WVGC | | Meningo | Meningococcal |
| | WVGC | | Meningococcal B | MeningB |
| | WVGC | | Mumps | Mumps Virus Vaccine |
| | WVGC | | Plague | Plague |
| | WVGC | | Pneumococcal or PCV | Pneumonia Conjugate |
| | WVGC | | Pneumo-Poly or PPV | Pneumonia Polysaccharide |
| | WVGC | | Polio | Poliomyelitis |
| | WVGC | | Rabies | Rabies |
| | WVGC | | Rotavirus | Rotavirus |
| | WVGC | | Rubella | Rubella Virus Vaccine |

| Type | Table | Name | Value | Description |
|--------------|-------------|----------------------------------|----------------------------------|---|
| | 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 | | ACAM2000 | Vaccinia (Smallpox) |
| | WVTN | | Acel-Imune | DTaP |
| | WVTN | | ActHib | Hib-PRP-T |
| | WVTN | | ADACEL | Tdap |
| | WVTN | | Adeno T4 | Adeno T4 |
| | WVTN | | Adeno T7 | Adeno T7 |
| | 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 | | Attenuvax | Measles |
| | WVTN | | BayGam | HepA-Ig |
| | WVTN | | BayHep B | HBIG |
| | WVTN | | BayHep B-Peds | HBIG |
| | WVTN | | BayRab | Rlg |
| | WVTN | | BayTet | Tlg |
| | WVTN | | BCG-Cancer | BCG-BC |
| | WVTN | | BCG-TB | BCG-TB |
| | WVTN | | BEXSERO | Meningococcal B, OMV |
| | WVTN | | Biavax II | Rubella-Mumps |
| | WVTN | | BioThrax | Anthrax |
| | WVTN | | BOOSTRIX | Tdap |
| | 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 Vaccine | COVID-19, mRNA, LNP-S, PF, 100 mcg/0.5 mL |
| | WVTN | | Pfizer-BioNTech COVID-19 Vaccine | COVID-19, mRNA, LNP-S, PF, 30 mcg/0.3 mL |
| | WVTN | | Janssen COVID-19 Vaccine | COVID-19, vector-nr, rS-Ad26, PF, 0.5 mL |
| | WVTN | | DAPTACEL | DTaP |
| | WVTN | | DECAVAC | Td-PF |
| | WVTN | | Diphtheria | Diphtheria |
| | WVTN | | Dryvax | Vaccinia (Smallpox) |
| | WVTN | | DT | DT-Peds |
| | WVTN | | DT-PF | DT-PF |
| | 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 |

| Type | Table | Name | Value | Description |
|------|-------|------|----------------------------------|--|
| | 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 (cclIIV3) | FLU, injectable, MDCK, pres free |
| | WVTN | | Flucelvax (cclIIV4) | 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 |
| | 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-IIV3 | FLU, intradermal trivalent, pres free |
| | WVTN | | Fluzone Intradermal-IIV4 | FLU, intradermal, quadrivalent, pres free |
| | 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 | | HBIg | HBIG |
| | WVTN | | HepaGam B | HBIG |
| | WVTN | | HEPLISAV-B | HepB-CpG |

| Type | Table | Name | Value | Description |
|------|-------|------|------------------------------|---|
| | 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 |
| | 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 | | 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 | | Prevnar 7 (formerly Prevnar) | Pneumo-Conjugate 7 |
| | WVTN | | Prevnar 13 | Pneumo-Conjugate 13 |
| | 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 | Hep B 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 |
| | WVTN | | Rubella | Rubella |

| Type | Table | Name | Value | Description |
|-------|-------|--|---------------------|---|
| | 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 | | Vivotif Berna/Ty21a | Typhoid-Oral |
| | WVTN | | Vivotif Berna | Typhoid-Oral |
| | WVTN | | Ty21a | Typhoid-Oral |
| | WVTN | | VZlg | VZlg |
| | WVTN | | YF-VAX | Yellow Fever |
| | WVTN | | Zostavax | Zoster Shingles, (live) |
| GRITS | C4 | Vaccines Administered (CPT code=C4) | (use in RXA-5) | (Note: The 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 http://www.cdc.gov/vaccines/programs/iis/stds/cpt.htm .) |
| | 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, 100 mcg/0.5 mL |
| | C4 | | 91303 | COVID-19, vector-nr, rS-Ad26, PF, 0.5 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 |

| Type | Table | Name | Value | Description |
|------|-------|------|-------|---|
| | C4 | | 90719 | Diphtheria |
| | C4 | | 90702 | DT |
| | C4 | | 90700 | DTaP |
| | C4 | | 90723 | DTaP-HepB-IPV |
| | C4 | | 90698 | DTaP-Hib-IPV |
| | C4 | | 90721 | DTaP-Hib |
| | C4 | | 90696 | DTaP-IPV |
| | C4 | | 90697 | DTaP,IPV,Hib,HepB |
| | 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 |
| | 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 | | 90740 | HepB dialysis |
| | C4 | | 90746 | HepB adult |
| | C4 | | 90739 | HepB, adult, 2-dose |
| | C4 | | 90747 | HepB-dial |
| | C4 | | 90748 | HepB-Hib |
| | C4 | | 90744 | HepB-peds |
| | 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 |

| Type | Table | Name | Value | Description |
|------|-------|------|-------|--|
| | C4 | | 90738 | Japanese Enceph-IM |
| | C4 | | 90665 | Lyme |
| | C4 | | 90705 | Measles |
| | C4 | | 90708 | Measles-Rubella |
| | C4 | | 90620 | MeningB, OMV |
| | C4 | | 90621 | MeningB, recombinant |
| | C4 | | 90733 | Meningococcal-Polysaccharide |
| | C4 | | 90734 | Meningococcal-MCV4 |
| | C4 | | 90619 | meningo poly (A,C,Y,W-135) TT conjugate |
| | C4 | | 90707 | MMR |
| | C4 | | 90710 | MMRV |
| | C4 | | 90704 | Mumps |
| | 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 | | 90732 | Pneumococcal 23 |
| | C4 | | 90713 | Polio IPV |
| | C4 | | 90712 | Polio oral |
| | 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 | | 90706 | Rubella |
| | C4 | | 90709 | Rubella-Mumps |
| | 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 | | 90393 | Vaccinia-Ig |
| | C4 | | 90716 | Varicella |
| | C4 | | 90396 | VZlg |

| Type | Table | Name | Value | Description |
|------|-------|------|-------|----------------------------|
| | C4 | | 90717 | Yellow Fever vaccine, live |
| | C4 | | 90736 | Zoster Shingles, (live) |
| | C4 | | 90750 | Zoster Subunit |