

Wisconsin Immunization Registry

HL7 – 2.3.1 – Implementation Guide for Immunization Messaging

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Wisconsin Immunization Registry

HL7 – General Transfer Specification (2.3.1)

Introduction

The Wisconsin Immunization Registry (WIR) 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 WIR 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 diverse systems. WIR is being enhanced to allow providers to use the HL7 Version 2.3.1 to submit client and immunization information to WIR.

The Health Level Seven (HL7) Standard

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

- The basic unit transmitted in an HL7 implementation is the **message**.
- Messages are made up of several **segments**, each of which is one line of text, beginning with a three-letter code identifying the segment type.
- Segments are in turn made up of several **fields** separated by a delimiter character, “|”.

```
MSH|^~\&|VALLEY CLINIC^^^||WIR^^^|19991005032342||VXU^V04|682299|P^|2.3.1^^^||ER
PID||79928^^^|A5SMIT0071^^^|SMITH^MARY^T^^^|JOHNSON^^^|19951212|F|||
RXA|0|999|19970903|19970903|^90701^DTP^CPT|0.5
```

The details of how HL7 messages are put together for WIR purposes will be explained later in this document; the example above shows the essentials of what a message looks like. In this example, a message is being sent on behalf of Valley Clinic to WIR consisting of three segments. NOTE: Valley Clinic may or may not be the actual transmitter of the message. The transmitter of the message will be identified by WIR from log-in information and not from an HL7 message.

- The Message Header segment (**MSH**) identifies the owner of the information being sent as (**VALLEY CLINIC**) and receiver (**WIR**) and identifies the message as being of type **VXU**, Unsolicited Vaccination Record Update, one of the message types defined by HL7.
- The Patient Identification segment (**PID**) gives the client’s name (**MARY T SMITH**), birth date (19951212, in YYYYMMDD format), and other identifying fields.
- The Pharmacy Administration segment (**RXA**) tells that a DTP vaccine, with CPT code 90701, was administered on September 3, 1997 (formatted as 19970903). Many fields are optional, and this example could have included more information. Some segments may be repeated within a single message. In this example, the message could have included a second RXA segment to record another immunization given.

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

Scope of This Document

The General Transfer Specification (GTS) documented here supports automated exchange of data between the WIR 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 WIR purposes. It does not cover the methods used to transmit files between the WIR 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 is a wide variety of other possible HL7 messages that are outside the scope of this document.

Disclaimer:

WIR’s Web Service and PHIN-MS transports are designed for “real-time” single messaging. Organizations should avoid sending a cannonade (barrage) of messages to WIR at a single given instance. If you have a large volume of messages that you need processed, WIR requests that you create a batch file and submit them via WIR batch process.

References

- See Version 2.3.1 (June 1999) of the Health Level 7 standard for a full description of all messages, segments, and fields. Information regarding HL7 is at www.hl7.org.
- The National Immunization Program within the Center for Disease Control (www.cdc.gov/nip) has published an Implementation Guide for Immunization Data with the purpose of keeping the use of HL7 for immunization data as uniform as possible.

HL7 Message Types Used in WIR Transmissions

WIR uses messages of three types, one for sending client data without immunizations, one for sending immunizations, and one for acknowledging messages 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 standard has provisions for inclusion of binary data, but WIR 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 and PID segments, or these could be followed by one, two, or any number of NK1 segments. The full HL7 standard allows additional segments within these message types, but they are unused by WIR. 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 WIR functions of storing data about clients and immunizations.

Note: When sending messages to WIR, if your message contains segments that are NOT defined herein, your messages will NOT be rejected by WIR. In the event that your message contains extraneous segments, WIR will ignore the segment (and all corresponding datum values).

ADT

Update Patient Information

| | |
|----------|----------------------------------|
| MSH | Message Header |
| PID | Patient Identification |
| [{NK1}] | Next of Kin / Associated Parties |
| [{*OBX}] | Observation/Result |

VXU

Unsolicited Vaccination Record Update

| | |
|---------|---|
| MSH | Message Header |
| PID | Patient Identification |
| [PD1] | Patient Additional Demographic |
| [{NK1}] | Next of Kin / Associated Parties |
| {RXA} | Pharmacy / Treatment Administration |
| [RXR] | Pharmacy / Treatment Route (Only one RXR per RXA segment) |
| [{OBX}] | Observation/Result* |

ACK

General Acknowledgment

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

*The only OBX segment valid within an ADT message is one indicating a CONTRAINDICATION specified in OBX-03 Value Type field. (e.g., 60009-8^Contraindication^LN)

RECOMMENDATIONS :

WIR will NOT accept an ADT message (unsolicited demographic update) for a new client unless at least ONE immunization exists for the client in WIR. Therefore, it is best to include the demographic update information in a VXU message whenever possible, as this message type accommodates BOTH immunization information and demographic update information. Should the provider wish to submit a new client using the ADT message, it must follow the VXU message for the new client within the file.

When a VXU^V04 (Unsolicited Vaccination Record Update) message type is sent with no RXA segment, a check is done to verify if the client exists in WIR or not. If the client already exists in WIR, then the demographic update will occur (*if all other update business rules apply). If the client is new to WIR, then the client will be rejected per current business rules.

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 each segment is structured contain the following columns:

- | | |
|------------------------|--|
| 1. SEQ | The ordinal position of the field in the segment. Since WIR does not use all possible fields in the HL7 standard, these are not always consecutive. When datum values are provided for fields NOT defined in this guide, WIR will ignore and NOT retain the datum value. |
| 2. LEN | Maximum length of the field |
| 3. DT | HL7 data type of the field. See below for definition of HL7 data types. |
| 4. R/M | R – required by HL7 M – mandatory for WIR Blank – optional field. |
| 5. 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. WIR supports repetition only for OBX-05. |
| 6. TBL# | Number of the table giving valid values for the field. |
| 7. 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 WIR. The elemental data types Numeric (NM) and String (ST) consist of one value, while some data types, such as Extended Person Name (XPN) are composites.
 - **Delimiter characters.** Field values of composite data types consist of several components separated by the **component separator**, “^”. When components are further divided into sub-components, these are separated by the **sub-component separator**, “&”. Some fields are defined to permit 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 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 WIR 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, WIR will always use the recommended delimiters when sending files and requires their use for files received.

Rules for Sending Systems

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

- Encode each segment in the order specified in the message format.
- Begin the segment with the 3-letter segment ID (for example RXA).
- 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 ordinal position, fields that are not present do not reduce the number of field separators in the segment. For example,

when the second and third fields are not present, the field separators maintain the ordinal position of the fourth field: |field1|||field4

- Data fields 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 followed by Hex 0A (carriage-return and linefeed), or a single character Hex 0A (line feed).

Rules for Receiving Systems

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

- Treat data segments that are expected but not present as if all data fields in the segment were not present.
- Require use of HL7 recommended Field Separator |, and Encoding characters ^~\& for encoding messages.
- Ignore any data segment that is included but not expected, rather than treating it as an error. The HL7 message types used by WIR may include many segments besides the ones in this document, and WIR ignores them. WIR 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 the ones needed to construct messages of the types used by WIR. Each segment is given a brief description excerpted from the HL7 standard. The tables define what fields make up each segment. Since WIR 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, their field separators remain in order to indicate that the next field present is the fourth: field1|||field4.

ERR

The ERR segment is used to add error comments to acknowledgment messages.

| 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)>^<field sub-component ordinal number (NM)

The first component identifies the segment ID 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 sub-component containing the error (0 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. For example, if the NK1 segment is missing a mandatory field:

ERR|NK1^10^2^1

This error message identifies the NK1 segment occurring on line 10 of the input file whose mandatory second field (Name) is missing the mandatory 1st component (Family Name).

MSA

The MSA segment contains information sent while acknowledging another 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 |

Field Notes:

MSA-1 Acknowledgement code giving receiver's response to a message. AA (Application Accept) means the message was processed normally. AE (Application Error) means an error prevented normal processing. An error message will be put in MSA-3, and for ACK messages the optional ERR segment will be included.

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

MSA-3 Text of error message, used when MSA-1 does not have the normal value of AA.

MSH

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

| SEQ | LEN | DT | R/M | RP/# | TBL# | ELEMENT NAME |
|-----|-----|-----|-----|------|------|----------------------------|
| 1 | 1 | ST | R | | | Field Separator |
| 2 | 4 | ST | R | | | Encoding Characters |
| 3 | 180 | 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 field separator in effect for the rest of this message. WIR 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. WIR requires the HL7 recommended values of ^~\&.
- MSH-3 Name of the sending application. When sending, WIR will use “WIR” followed by the current version number of the registry. This field is an optional convenience. See MSH-4 and MSH-6 for the fields principally used to identify sender and receiver of the message.
- MSH-4 Identifies for whom the message is being sent (the owner of the message information). When sending, WIR will use “WIR”. When the message is being sent to WIR and the Provider Organization owning the information is different than the organization transmitting the message, use the WIR Provider ID of the Provider Organization that owns the information. Contact the WIR Help Desk for the appropriate organization ID. If the owner of the information and the transmitter of the information are the same Provider Organization, this field may be left blank.

This field is required for:

1. Providers that are sending via PHIN-MS or Web Services

- MSH-6 Identifies the message receiver. When sending, WIR will use the brief Provider Organization name assigned when the provider first registers with the WIR database and WIR-Web interface.
- MSH-7 Date and time the message was created. WIR ignores any time component. See the TS data type.
- MSH-9 This is a required field. Two components of this field give the HL7 message type (see Table 0076) and the HL7 triggering event (see Table 0003). Within HL7, the triggering event is considered to be the real-world circumstance causing the message to be sent. For WIR 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. In acknowledgement messages the value ACK is sufficient and the second component may be omitted.
- MSH-10 This is a required field. The message control ID is a string (which may be a number) uniquely identifying the message among all those ever sent by the sending system. It is assigned by the sending system and echoed back in the ACK message sent in response.
- MSH-11 The processing ID to be used by WIR is **P** for production processing. If this field is null, an informational message is generated indicating that WIR is defaulting to **P**.
- MSH-12 This is a required field. Use a value of “2.3.1” to indicate HL7 Version 2.3.1.
- MSH-15 This field controls whether an acknowledgement is generated for the message sent. WIR suggests a value of ER to ask that acknowledgements be sent only for messages that cannot be processed normally. If the field is empty, WIR will assume the value of ER.

PID

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 | | | Patient ID (Internal ID) |
| 5 | 48 | XPN | R | Y | | Patient Name |
| 6 | 48 | XPN | | 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 | | | | Patient Address |
| 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 When a Provider Organization is sending to WIR, use the client's WIR Client ID if available. When WIR is sending to an outside system, it will use that system's Chart Number or other identifier if available. If a
- PID-3 When a Provider Organization is sending to WIR, use the sending system's Chart Number or other identifier if available. When WIR is sending to an outside system it will use the client's WIR ID and chart number when it is available. WIR does not support repetition of this field.
- PID-5 See the XPN data type. Last name and first name are required in the first two components. WIR does not support repetition of this field.
- PID-6 See the XPN data type. In this context, where the mother's name is used for client identification, WIR uses only last name and first name. A mother's legal name might also appear in the context of an NK1 segment. WIR does not support repetition of this field.
- PID-7 Give the year, month, and day of birth (YYYYMMDD). WIR ignores any time component.
- PID-8 See Table 0001. Use F, M, or U.
- PID-10 See Table 0005. WIR stores and writes "unknown" values as null. WIR does not accept Hispanic or Latino as a race option. Submit it in the Ethnic Group PID-22 field. WIR does not support repetition of this field.
- PID-11 See the XAD data type. WIR does not support repetition of this field.
- PID-19 NOTE: Social security number is used for identification purposes only, and is not displayed in screens or distributed to Provider Organizations.
- PID-22 See Table 0189. WIR does not support repetition of this field.
- 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. Give the year, month, and day (YYYYMMDD). WIR ignores any time component. If a death date is sent, then the Patient Registry Status in PD1-14 must indicate a value of "P" for permanently inactive/deceased.

PD1

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

| SEQ | LEN | DT | R/M | RP/# | TBL# | ELEMENT NAME |
|-----|-----|----|-----|------|--------|-------------------------|
| 11 | 80 | CE | | | 0215 | Publicity Code |
| 12 | 1 | ID | | | 0136 | Protection Indicator |
| 14 | 40 | IS | | | NIP006 | Patient Registry Status |

Field Notes:

PD1-11 Controls whether recall/reminder notices are sent. WIR will recognize “01” to indicate no recall/reminder notices or “02” recall/reminder notices any method.

PD1-12 Controls visibility of records to other organizations.

PD1-14 See table NIP006.

NK1

The NK1 segment contains information about the patient’s other related parties. Any associated parties may be identified. Utilizing *NK1-1-set ID*, multiple NK1 segments can be sent to patient accounts.

| SEQ | LEN | DT | R/M | RP/# | TBL# | ELEMENT NAME |
|-----|-----|-----|-----|------|------|----------------|
| 1 | 4 | SI | R | | | Set ID – NK1 |
| 2 | 48 | XPN | | Y | | Name |
| 3 | 60 | CE | | | 0063 | Relationship |
| 4 | 106 | XAD | | Y | | Address |
| 5 | 40 | XTN | | Y | | Phone Number |
| 22 | 80 | CE | | | 0215 | Publicity Code |

Field Notes:

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

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

NK1-3 Relationship of the responsible person to the client. See data type CE and Table 0063 in the HL7 tables. Use the first three components of the CE data type, for example |32^Mother^HL70063^^^|.

NK1-4 Responsible person’s mailing address. See the XAD data type. WIR does not support repetition of this field.

NK1-5 Responsible person’s phone number. Format as (999)999-9999. WIR does not support repetition of this field.

NK1-22 Controls whether recall/reminder notices are sent for the responsible person. WIR will recognize “01” to indicate no recall/reminder notices or “02” recall/reminder notices any method.

RXA

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

| SEQ | LEN | DT | R/M | RP/# | TBL# | ELEMENT NAME |
|-----|-----|-----|-----|------|--------|-----------------------------------|
| 1 | 4 | NM | R | | | Give Sub-ID Counter |
| 2 | 4 | NM | R | | | Administration Sub-ID Counter |
| 3 | 26 | TS | R | | | Date/Time Start of Administration |
| 4 | 26 | TS | R | | | Date/Time End of Administration |
| 5 | 100 | CE | R | | | Administered Code |
| 6 | 20 | NM | R | | | Administered Amount |
| 7 | 60 | CE | C | | | Administered Units |
| 9 | 200 | CE | | Y | NIP001 | Administration Notes |
| 10 | 200 | XCN | | | | Administering Provider |
| 11 | 200 | CM | | | | Administered-at location |
| 15 | 20 | ST | | | | Substance Lot Number |
| 17 | 60 | CE | | | 0227 | Substance Manufacturer Name |
| 18 | 200 | CE | | | NIP002 | Substance Refusal Reason |
| 21 | 2 | ID | | | | Action Code-RXA |

Field Notes:

RXA-1 Required by HL7. Use “0” for WIR.

RXA-2 Required by HL7. Use “999” for WIR

RXA-3 Date the vaccine was given. WIR ignores any time component.

RXA-4 Required by HL7. Ignored by WIR, which will use the value in RXA-3.

RXA-5 This field identifies the vaccine administered. WIR accepts the CVX code, CPT code, Vaccine Trade Name, or Vaccine Group Code for the vaccine administered. If using the CVX code, give the CVX code in the first component and “CVX” in the third component. If using the CPT code, the vaccine group code or vaccine trade name, use components four through six. For example, give the CPT code in the fourth component and “CPT” in the sixth component, [^^^90700^DtaP^CPT]. If using vaccine group code, use “WVGC” as the name of the coding system. If using vaccine trade name, use “WVTN” as the name of the coding system. See the CE data type and HL7 – Table 0292 (CVX Codes), WIR – Table WCPT (CPT Codes), WIR – Table WVGC (Vaccine Group Codes), and WIR – Table WVTN (Vaccine Trade Names).

RXA-6 When RXA-7 is **not** valued

This field value will be interpreted as Dose Magnitude – the number of age appropriate doses administered. For example, a dose magnitude of 2 of a pediatric formulation would be adequate for an adult. WIR and HL7 require this field to contain a value. However, a value of 1.0 will be stored in its place

When RXA-7 is valued

This field value will be interpreted as the dosage amount (e.g., 0.5, 0.65, 1.0, 1.5, etceteras.). The dose amount provided will be saved and displayed/reported.

RXA-7 WIR will recognize any value to indicate that RXA-06 should be interpreted as the dosage amount. WIR will treat the immunization as 1 FULL dose and store and display/report administered unit (ML, gm, grams, CAP, etc.) that is provided.

RXA-9 WIR will recognize 00 to indicate Administered Vaccine, 01 to indicate Historical Record or 07 to indicate School Record. When sending, WIR will include the corresponding immunization id in the second repeating segment.

[01^^^^~9999999^WIR immunization id^IMM_ID^^^]

The 07 value can only be used by organizations that are set up to send school information, otherwise the incoming immunization will be rejected.

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

RXA-11 WIR will use this field to identify the facility where the vaccine was administered. Place the facility name in component 4.

RXA-15 Manufacturer’s lot number for the vaccine. WIR does not support repetition of this field.

RXA-17 Vaccine manufacturer from Table 0227, for example [AB^Abbott^ MVX^^]. The HL7 2.3.1 specification recommends use of the external code set MVX. “When using this code system to identify vaccines, the coding system component of the CE field should be valued as “MVX” not as “HL70227.” WIR does not support repetition of this field.

RXA-18 When applicable, this field records the reason the patient refused the vaccine. See table NIP002. Any entry in this field indicates that the patient did not take the substance. The vaccine that was offered should be recorded in RXA-5, with the number 0 recorded for the dose number in RXA-2. Do not record contraindications, immunities or reactions in this field. WIR does not support repetition of this field.

Notes on Refusals:

- 6) WIR only stores the fact that a refusal of a vaccine occurred, not a specific type of refusal, so all outgoing refusals will be designated as “PARENTAL DECISION.” Please see the example below.
- b) The WIR system will not write out refusals which do not have an applies-to date. It will write out multiple refusals for the same vaccine on different dates for those clients who have them.
- c) The WIR system will accept incoming refusals of the same vaccine on different dates and file them both. However, if they both have the same applies-to date, then only one will be stored.
- d) The sending organization will become the refusal owner. In general, only the organization who owns the refusal is permitted to edit it. However, in the case of parent and child organizations, the parent may edit the child’s refusals and vice versa.

Here is a sample RXA segment for an MMR refusal given on the date 01/01/2007:

```
RXA|0|0|20070101|20070101|^^^MMR^MMR^WVGC|1.0|||||||00^PARENTAL
REFUSAL^NIP002^^^
```

RXA-21 To delete an existing immunization in WIR specify a value of “D”. In addition to requiring that the existing immunization is owned by the same provider requesting the delete, WIR limits that no more than 5% of all incoming immunizations can be flagged as delete and no more than 50 total.

RXR

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 This is the route of administration from table 0162.

RXR-2 This is the site of the route of administration from table 0163.

OBX

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

| SEQ | LEN | DT | R/M | RP/# | TBL# | ELEMENT NAME |
|-----|-------|----|-----|------|------|------------------------------|
| 1 | 10 | SI | | | | Set ID-OBX |
| 2 | 3 | ID | | | | Value type |
| 3 | 590 | CE | R | | | Observation Identifier |
| 5 | 65536 | - | R | Y | | Observation Value |
| 11 | 1 | ID | R | | 0085 | Observation Result Status |
| 14 | 26 | TS | | | | Date/Time of the observation |

Field Notes:

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

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

For school data exchange, the system will also accept and send the value ID in OBX-2

OBX-3 When indicating a **Vaccination Contraindication/Precaution**, use 60009-8 in this field and enter a Contraindication, Precaution, or Immunity code (NIP004) in OBX-5.

Example : OBX|1|CE|60009-8^Contraindication^LN||21^acute illness^NIP^^^|F|

When indicating a **Reaction to Immunization**, use 31044-1 in this field and enter a Reaction code (WIR001) in OBX-5.

Example: OBX|1|CE|31044-1^Reaction^LN|^HYPOTON^hypotonic^WIR^^^|F|

When indicating a **Vaccination Adverse Event Outcome**, use 60012-2 in this field and enter an Event Consequence code (NIP005) in OBX-5.

Example: OBX|1|CE|60012-2^Adverse Outcome^LN|^E^er room^NIP^^^|F|

When indicating a **FERPA Release Status**, use FERPA in this field and enter a Yes/No Indicator code (HL70136) in OBX-5.

Example: OBX|1|ID|FERPA^FERPA Release^99W01||Y|||F|

When indicating a **Graduation Year**, use GRADYEAR in this field and enter a four digit year (YYYY) in OBX-5.

Example: OBX|1|TS|GRADYEAR^Graduation Year^99W01||2023|||F|

When indicating **Date Enrolled in WI School**, use ENROLLDATE in this field and give the year, month, and day that the student was first enrolled in Wisconsin Schools (YYYYMMDD) in OBX-5.

Example: OBX|1|TS|ENROLLDATE^Date Enrolled in WI School^99W01||20010825|||F|

OBX-5 Text reporting Contraindication, Precaution, or Immunity (NIP004), Reaction (WIR001), Event Consequence (NIP005), or WIR Student Information (99W01). WIR has imposed a CE data type upon this field. The first component of which is required.

(e.g., |PERTCONT^Pertussis contra^WIR^^^|)

OBX-11 Required for HL7. Use "F" for WIR.

OBX-14 Records the time of the observation. WIR ignores any time component.

NOTE 1: The only valid OBX Observation Identifier (OBX-03) for an **ADT^A31** message type is Contraindication/Precaution (60009-8).

NOTE 2: All OBX messages with an observation identifier of Vaccination Contraindication/Precaution will be returned in an outgoing file in a separate ADT message for the client.

Batch Files of HL7 Messages

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

```

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 | M | | | File Sending Facility |
| 6 | 20 | ST | M | | | File Receiving Facility |
| 7 | 26 | TS | M | | | File Creation Date/Time |
| 9 | 20 | ST | M | | | File Name/ID |
| 10 | 80 | ST | | | | File Header Comment |
| 11 | 20 | ST | M | | | File Control ID |
| 12 | 20 | ST | | | | Reference File Control ID |

Field Notes:

FHS-1 Same definition as the corresponding field in the MSH segment.

FHS-2 Same definition as the corresponding field in the MSH segment.

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

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

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

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

FHS-9 Name of the file as transmitted from the initiating system.

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

FHS-11 This field is used to identify a particular file uniquely among all files sent from the sending facility identified in FHS-4.

FHS-12 Contains the value of FHS-11-file control ID when this file was originally transmitted. Not present if this file is being transmitted for the first time.

FTS

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. WIR 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 | M | | | Batch Sending Facility |
| 6 | 20 | ST | M | | | Batch Receiving Facility |
| 7 | 26 | TS | M | | | Batch Creation Date/Time |
| 10 | 80 | ST | | | | Batch Comment |
| 11 | 20 | ST | M | | | Batch Control ID |
| 12 | 20 | ST | | | | Reference Batch Control ID |

Field Notes:

BHS-1 This field contains the separator between the segment ID and the first real field, *BHS-2-batch encoding characters*. As such it serves as the separator and defines the character to be used as a separator for the rest of the segment. WIR requires | (ASCII 124).

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

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

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

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

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

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

BHS-11 This field is used to uniquely identify a particular batch. It can be echoed back in *BHS-12-reference batch control ID* if an answering batch is needed. For WIR 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.

File Interchange between WIR and Outside Systems

The central repository of WIR contains records of clients from around the state. Client and immunization records flow both ways between WIR and outside systems. Data for a particular client is transmitted by WIR 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 WIR. 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 for exchanging data with WIR. (1) The Provider Organization can send data to WIR and request no data be returned from WIR. (2) The Provider Organization can request data from WIR while not providing data to WIR. (3) The Provider Organization can send data to WIR and WIR will return any updated information regarding clients having a relationship with the Provider Organization to the Provider Organization.

Note that client and immunization data can also be entered, queried up, and modified using the WIR-Web interface, and this provides an alternate way of identifying a client as having a relationship with a Provider Organization. But use of WIR-Web is not required to create a relationship between a Provider Organization and a client, and the first transmission to WIR of a client immunization record creates the link that thereafter causes WIR 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 WIR 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 WIR 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, WIR responds with a file of ACK messages. At the same time or soon after, WIR also creates another file of ADT and VXU messages, containing the full client record, to send to the Provider Organization that initiated the first 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, WIR 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 WIR to initiate sending its own data file.

| Provider Organization | | WIR | |
|-----------------------|--|---|---|
| | | Outgoing | Receiving |
| 1. | Creates a file of client and immunization records that have changed since they were last transmitted to WIR. | | |
| 2. | Transmits the file to WIR. | | |
| 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 this file to the Provider Organization. | |
| 8. | Processes the file received, creates a file of ACK messages. | | |
| 9. | Transmits the ACK file back to WIR | | |
| 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 WIR 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 WIR creates in Step 6. It is also possible for the file WIR 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 WIR HL7 file is put together, we will show how the fictional Valley Clinic formats client and immunization records to transmit to WIR. The following table shows 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.

| Information to transmit | Data value to be entered (See page 13 for format) | HL7 Format |
|---|--|-------------|
| • Client #1 | | PID segment |
| • Chart Number (ID on Valley Clinic's system) | 45LR999 | PID-3 |
| • Name | GEORGE M MILLER JR | PID-5 |
| • Mother's maiden name | MARTHA OLSON | PID-6 |
| • Birth date | February 27, 1995 | PID-7 |
| • Sex | M | PID-8 |
| • Address | 123 MAIN ST MADISON, WI 53000, WI025 | PID-11 |
| • Social Security Number | 000111222 | PID-19 |
| • Multiple Birth Indicator | Y (client was born as part of a multiple birth) | PID-24 |
| • Birth Order | 2 (second birth of a multiple birth) | PID-25 |
| • Publicity Code | 02 | PD1-11 |
| • Protection Indicator | Y (client records are visible by other provider organizations) | PD1-12 |
| • Patient Registry Status | A (client is active in the registry) | PD1-14 |
| • Responsible Person (parent or other person who cares for client) | | NK1 segment |
| • Name | MARTHA MILLER | NK1-2 |
| • Relationship to client | 32 | NK1-3 |
| • Address | 123 MAIN ST MADISON, WI 53000, W1025 | NK1-4 |
| • Phone | 608 123 4567 | NK1-5 |
| • Responsible Person | | NK1 segment |
| • Name | GEORGE MILLER | NK1-2 |
| • Relationship to client | 33 | NK1-3 |
| • Responsible Person | | NK1 segment |
| • Name | LUCAS JONES | NK1-2 |
| • Relationship to client | D3 | NK1-3 |
| • Address | MADISON, WI 53715 | NK1-4 |
| • Phone | 515 829 1521 | NK1-5 |
| • Publicity Code | 02 | NK1-22 |
| • Client #2 | | PID segment |
| • WIR Client ID (Valley Clinic received this in an earlier transmission from WIR) | 66782 | PID-2 |
| • Chart Number | 23LK729 | PID-3 |
| • Name | MARIA CALIFANO | PID-5 |
| • Mother's maiden name | ANGELICA DISTEFANO | PID-6 |
| • Birth date | April 13, 1998 | PID-7 |
| • Sex | F | PID-8 |
| • Immunization | | RXA segment |

| | | |
|---------------------------------------|--|-------------|
| • Date administered | July 23, 1999 | RXA-3 |
| • Vaccine | DtaP | RXA-5 |
| • CPT Code | 90700 | RXA-5 |
| • Dose (ml) | 0.5 | RXA-6 |
| • Administering Provider Organization | Valley Clinic | RXA-10 |
| • Immunization | | RXA segment |
| • Date administered | July 23,1999 | RXA-3 |
| • Vaccine | MMR | RXA-5 |
| • CPT Code | 90707 | RXA-5 |
| • Dose (ml) | 0.5 | RXA-6 |
| • Administering Provider Organization | Valley Clinic | RXA-10 |
| • Client #3 | | PID segment |
| • WIR Client ID | 927389 | PID-2 |
| • Chart Number | 92HG9257 | PID-3 |
| • Name | JOSEPH FISHER | PID-5 |
| • Mother's maiden name | MARY LASOWSKI | PID-6 |
| • Birth date | May 28, 1998 | PID-7 |
| • Sex | M | PID-8 |
| • Immunization | | RXA segment |
| • Date administered | July 29, 1999 | RXA-3 |
| • Vaccine | MMR | RXA-5 |
| • CPT Code | 90707 | RXA-5 |
| • Dose (ml) | 0.5 | RXA-6 |
| • Administering Provider Organization | Valley Clinic | RXA-10 |
| • Lot number | AD19487 | RXA-15 |
| • Lot expiration date | December 12, 1999 | RXA-16 |
| • Lot manufacturer | FLYBYNIGHT LABORATORIES (this manufacturer is not found in the valid list in HL7 Table 0227, and the invalid value will cause WIR to reject the message with an error message) | RXA-17 |

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 the carriage return character is denoted by <CR>.

```
FHS|^~\&|VALSYS|VALCLIN||WIR|19990802091523||filename1.hl7|WEEKLY HL7
  UPLOAD|00009972<CR>
BHS|^~\&|VALSYS|VALCLIN||WIR|19990802091523|||00010223<CR>
MSH|^~\&|VALSYS|VALCLIN||WIR|19990802091524||ADT^A31|00000123|P|2.3.1|||AL<CR>
PID||45LR999||MILLER^GEORGE^M^JR|OLSON^MARTHA|19950227|M||123 MAIN
  ST^^MADISON^WI^53000^US^^^DANE|||||000111222||| |Y|2<CR>
PD1|||||02^REMINDER/RECALL - ANY MENTOD^HL70215|Y| |A<CR>
NK1|1|MILLER^MARTHA|32^Mother^HL70063|123 MAIN ST^^MADISON^WI^53000^US^^^W1025
  |(608) 123-4567<CR>
NK1|2|MILLER^GEORGE|33^Father^HL70063<CR>
NK1|3|JONES^LUCAS^^^^|D3^Uncle^HL70063^^^|^Madison^WI^53715^USA^^^^|(515) 829-
  1521|||||02<CR>
MSH|^~\&| VALSYS|VALCLIN||WIR|19990802091524||VXU^04|00000124|P|2.3.1|||ER<CR>
PID||66782|23LK729|CALIFANO^MARIA|DISTEFANO^ANGELICA|19980413|F<CR>
RXA|0|999|19990723|19990723|^^^90700^DtaP^CPT|0.5|||VALCLIN<CR>
RXA|0|999|19990723|19990723|^^^90707^MMR^CPT|0.5|||VALCLIN<CR>
MSH|^~\&|VALSYS|VALCLIN||WIR|19990802091526||VXU^04|00000125|P|2.3.1|||ER<CR>
```

```

PID||927389|92HG9257|FISHER^JOSEPH|LASOWSKI^MARY|19980528|M<CR>
RXA|0|999|19990729|19990729|^^^90707^MMR^CPT|0.5|||VALCLIN|||AD19487|
19991212|ZZ^FLYBYNIGHT LABORATORIES^HL70227|||A<CR>
BTS|3<CR>
FTS|1<CR>

```

Note: When a client is being introduced to WIR the VXU message must precede the ADT message as we must have one immunization for a client before they will be added to the database. Sending ADT messages is unnecessarily redundant when sending VXU messages for the same client, as the VXU message is capable of reporting the information for both message types.

In the example above, Valley Clinic sends a file of three HL7 messages to WIR. The messages are bracketed by file and batch header segments. The first message is of type ADT, which can be used when sending client demographic data without immunization information. This message type MUST follow a VXU message for the client if the client is new to the WIR system.

Client George M Miller Jr. is identified by Valley Clinic's chart number, 45LR999, in his PID segment. The message could have included George's WIR ID number in field PID-2, but does not have to, if it is not recorded in Valley Clinic's system. George's mother's maiden name, birth date, sex, address, and social security number 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 WIR. Fields not present do not diminish the number of "|" delimiters, so later fields can be identified by ordinal position in the segment. Two NK1 segments give some information for George's mother and father, just the minimum required for his father, with address and telephone fields for his mother.

The next two PID segments in the second and third messages give a WIR client ID in field PID-2. This must have been transmitted earlier from WIR to Valley Clinic's system. In this case it is legitimate to omit more of the optional PID fields, since WIR must have at least the minimum required information for these clients even to create a record. However, if there is a possibility that Valley Clinic has new or changed information to send to WIR, these fields should be present, and it does no harm to repeat fields even if they have been transmitted previously.

```

FHS|^~\&|WIR|WIR||VALCLIN|19990803200106||filename2.hl7||000023479|00009972<CR>
BHS|^~\&|WIR|WIR||VALCLIN|19990803200116|||00004321|00010223<CR>
MSH|^~\&|WIR|WIR||VALCLIN|19990803200117||ACK|00000456|P|2.3.1<CR>
MSA|AA|00000123<CR>
MSH|^~\&|WIR|WIR||VALCLIN|19990803200119||ACK|00000458|P|2.3.1<CR>
MSA|AE|00000125|INVALID MANUFACTURER CODE<CR>
ERR|RXA^152^17^1<CR>
BTS|2|<CR>
FTS|1<CR>

```

WIR answers the file from the above example with a file of ACK messages. Valley Clinic's message 00000123 had the value AL in field MSH-15, asking for acknowledgements of all messages. The value AA in MSA-1 tells that this message was processed without error. The next message, 00000124, uses the value ER to ask for acknowledgement only in case of errors, so this message is acknowledged implicitly by the absence of an ACK message for it. This example, while legitimate, is for purposes of illustration, and most providers will probably prefer to follow the WIR recommendation of error acknowledgements only. The last message, 00000125, did contain an error, and the ERR segment in its acknowledgement indicates the segment ID (RXA) of the segment, the line number (152) where it appears in the input file, the errant field (17) and the field component (1). The MSA segment contains the error message. Errors will be generated for missing required data, invalid data, or any other deviance from the form and content of messages as specified in this document. If all three messages in the first file above had requested error acknowledgement only, and none had any errors, the answering file from WIR would contain just the FSH, BHS, BTS, and FTS segments, and all messages would be implicitly acknowledged as successfully processed.

In the sample file exchange above, the outside system initiated the exchange with the file of ADT and VXU segments, and WIR responded with ACK segments. The format is identical when WIR 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. WIR 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 WIR's client ID, and use it in PID-2 when sending to WIR. This provides a firm basis for client identification, makes processing easier for the WIR 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 WIR database. Though WIR makes a great effort to match client records effectively, use of the WIR client ID is the best guarantee of clean and useful data.

Appendix A – HL7 Data Types

The Center for Disease Control Implementation Guide (CDC IG) contains clearly defined HL7 data types that are the building blocks of an HL7 message. This guide will avoid potentially ambiguous situations and will not redefine an already clearly defined section. Data types not otherwise noted herein, will adhere to corresponding definition in Chapter 4: HL7 Data Types of the CDC IG.

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 WIR 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

Components: <point of care (IS)> ^ <room (IS)> ^ <bed (IS)> ^ <facility (HD)> ^ <location status (IS)> ^ <patient location type (IS)> ^ <building (IS)> ^ <floor (IS)> ^ < street address (ST)> ^ <other designation (ST)> ^ <city (ST)> ^ <state or province (ST)> ^ <zip or postal code (ST)> ^ <country (ID)> ^ <address type (ID)> ^ <other geographic designation (ST)>

Subcomponents of facility (HD): <namespace ID (IS)> & <universal ID (ST)> & <universal ID type (ID)>

Example:

|^^^Valley Clinic|

Definition: The first component contains the inpatient or outpatient location at which the drug or treatment was administered (if applicable). The default (null) value is the current census location for the patient. Site-specific table. The first eight components have the same form as the first eight components of *PVI-3-assigned patient location*. The final eight components replace the ninth component of *PVI-3-assigned patient location* and represent the full address specification.

CX

Extended Composite ID with Check Digit

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

HD

Hierarchic Designator

WIR uses this data type only to identify sender and receiver in Message Header (MSH) segments. See the field notes for values used for WIR.

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]]]]]]]]][+/-ZZZZ]^<degree of precision>

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

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)> ^ <address representation code (ID)>

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.

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).

Census tract (IS)

An optional code that represents the census tract in which the specified address resides. WIR does not store this value.

XCN

Extended Composite ID Number and Name For Persons

WIR 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 (e.g., Jr. or III).

Prefix (ST)

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

Degree (ST)

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

Name type code (ID)

A code that represents the type of name. Refer to *HL7 table 0200 – Name type* for valid values.

Table 0200 – Name type

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

| Type | Table | Name | Value | Description |
|------|-------|---------------------------------|-------|---|
| User | 0001 | Sex | | |
| | 0001 | | F | Female |
| | 0001 | | M | Male |
| | 0001 | | U | Unknown |
| HL7 | 0003 | Event Type | | |
| | 0003 | | A31 | ADT/ACK - Update patient information |
| | 0003 | | V04 | VXU – Unsolicited vaccination record update |
| User | 0005 | Race | | |
| | 0005 | | I | American Indian or Alaska Native |
| | 0005 | | A | Asian or Pacific Islander |
| | 0005 | | B | Black |
| | 0005 | | W | Caucasian |
| | 0005 | | O | Other |
| | 0005 | | U | Unknown |
| HL7 | 0008 | Acknowledgment Code | | |
| | 0008 | | AA | Application Accept |
| | 0008 | | AE | Application Error |
| | 0008 | | AR | Application Reject |
| User | 0063 | Relationship | | |
| | 0063 | | 18 | Self |
| | 0063 | | 21 | Unknown |
| | 0063 | | 26 | Guardian |
| | 0063 | | 31 | Court Appointed Guardian |
| | 0063 | | 32 | Mother |
| | 0063 | | 33 | Father |
| | 0063 | | 36 | Emancipated Minor |
| | 0063 | | 48 | Stepfather |
| | 0063 | | 49 | Stepmother |
| | 0063 | | 51 | Emergency Contact |
| | 0063 | | 57 | Adoptive Father |
| | 0063 | | 58 | Adoptive Mother |
| | 0063 | | 61 | Aunt |
| | 0063 | | 62 | Brother |
| | 0063 | | 87 | Foster Father |
| | 0063 | | 88 | Foster Mother |
| | 0063 | | 97 | Grandfather |
| | 0063 | | 98 | Grandmother |
| | 0063 | | A4 | Half Brother |
| | 0063 | | A5 | Half Sister |
| | 0063 | | B7 | Sister |
| | 0063 | | C3 | Step Brother |
| | 0063 | | C8 | Step Sister |
| | 0063 | | D3 | Uncle |
| | 0063 | | G7 | Neighbor |
| | 0063 | | G8 | Other Relationship |
| | 0063 | | G9 | Other Relative |
| HL7 | 0076 | Message Type | | |
| | 0076 | | ACK | General acknowledgment message |
| | 0076 | | ADT | ADT message |
| | 0076 | | VXU | Unsolicited vaccination record update |
| HL7 | 0085 | Observation result status codes | | |
| | 0085 | | O | Order detail description only |
| HL7 | 0103 | Processing ID | | |
| | 0103 | | P | Production |
| HL7 | 0104 | Version ID | | |

| Type | Table | Name | Value | Description |
|------|-------|--|-------|----------------------------------|
| | 0104 | | 2.3.1 | Release 2.3.1 1999 |
| HL7 | 0136 | Yes/No Indicator | | |
| | 0136 | | Y | Yes |
| | 0136 | | N | No |
| HL7 | 0155 | Accept/Application Acknowledgment Conditions | | |
| | 0155 | | ER | Error/reject conditions only |
| HL7 | 0162 | Route of Administration | | |
| | 0162 | | ID | Intradermal |
| | 0162 | | IM | Intramuscular |
| | 0162 | | IN | Intranasal |
| | 0162 | | IV | Intravenous |
| | 0162 | | PO | Oral |
| | 0162 | | SC | Subcutaneous |
| | 0162 | | TD | Transdermal |
| | 0162 | | MP | Multiple Puncture (Small Pox) |
| HL7 | 0163 | Administrative Site | | |
| | 0163 | | LT | Left Thigh |
| | 0163 | | LA | Left Arm |
| | 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 | | |
| | 0189 | | H | Hispanic |
| | 0189 | | NH | Non-Hispanic |
| User | 0212 | Nationality | | |
| | 0212 | | CA | Canada |
| | 0212 | | US | United States of America |
| User | 0215 | Publicity Code | | |
| | 0215 | | 01 | No reminder/recall |
| | 0215 | | 02 | Yes reminder/recall – any method |
| HL7 | 0203 | Identifier Type | | |
| | 0203 | | BR | Birth Registry Number |
| | 0203 | | MA | Medicaid Number |
| | 0203 | | MC | Medicare Number |
| | 0203 | | MR | Medical Record Number |
| | 0203 | | PI | Patient Internal Identifier |
| | 0203 | | PN | Person Number |
| | 0203 | | PRN | Provider Number |
| | 0203 | | PT | Patient External Identifier |
| | 0203 | | RRI | Regional Registry ID |
| | 0203 | | SR | State Registry Identifier |
| | 0203 | | SS | Social Security Number |
| HL7 | 0227 | Manufacturers of vaccines (code = MVX) | | |
| | 0227 | | AB | Abbott |
| | 0227 | | ACA | ACAMBIS |
| | 0227 | | AD | Adams |
| | 0227 | | ALP | Alpha |

| Type | Table | Name | Value | Description |
|------|-------|------|-------|--|
| | 0227 | | AP | Sanofi Pastuer |
| | 0227 | | AR | Armour (Inactive – use CSL) |
| | 0227 | | AVB | Aventis Behring (Inactive – use CSL) |
| | 0227 | | AVI | Aviron |
| | 0227 | | BA | Baxter (Inactive – use BAH) |
| | 0227 | | BAH | Baxter Health Care |
| | 0227 | | BAY | Bayer |
| | 0227 | | BP | Berna (Inactive – use BPC) |
| | 0227 | | BPC | Berna Products Corporation |
| | 0227 | | BRR | Barr Laboratories |
| | 0227 | | CEN | Centeon L.L.C. (Inactive – use CSL) |
| | 0227 | | CHI | Chiron Corporation (Inactive – use NOV) |
| | 0227 | | CMP | Celltech Medeva Pharm (Inactive – use NOV) |
| | 0227 | | CNJ | Cangene Corporation |
| | 0227 | | CON | Connaught (Inactive – use PMC) |
| | 0227 | | CRU | CruCell |
| | 0227 | | CSL | CSL Behring, Inc. |
| | 0227 | | DVX | Dynavax Inc. |
| | 0227 | | EVN | Evans (Inactive – use NOV) |
| | 0227 | | GEO | GeoVax Labs, Inc |
| | 0227 | | GRE | Greer |
| | 0227 | | GRF | Grifols |
| | 0227 | | IAG | Immuno International AG (Inactive – use BAH) |
| | 0227 | | IDB | ID Biomedical |
| | 0227 | | IM | Merieux (Inactive – Use PMC) |
| | 0227 | | INT | Intercell Biomedical |
| | 0227 | | IUS | Immuno-US |
| | 0227 | | JPN | The Research foundation for Microbial Diseases of Osaka U. |
| | 0227 | | KGC | Korea Green Cross |
| | 0227 | | LED | Lederle (Inactive – use WAL) |
| | 0227 | | MA | Massachusetts Public Health (Inactive -Use MBL) |
| | 0227 | | MBL | Massachusetts Biologic Laboratories |
| | 0227 | | MED | MedImmune |
| | 0227 | | MIL | Miles (Inactive – use BAY) |
| | 0227 | | MIP | Emergent BioDefense Operatons Lansing |
| | 0227 | | MSD | Merck |
| | 0227 | | NAB | North American Biologicals, Inc. |
| | 0027 | | NAV | North American Vaccine (Inactive – use BAH) |
| | 0227 | | NYB | New York Blood Center |
| | 0227 | | NOV | Novartis |
| | 0227 | | NVX | Novavax, Inc |
| | 0227 | | OTC | Organon Teknika |
| | 0227 | | ORT | Ortho |
| | 0227 | | PAX | PaxVax |
| | 0227 | | PD | Parkdale Pharmaceuticals (formerly Parke Davis) |
| | 0227 | | PFR | Pfizer |
| | 0227 | | PMC | Sanofi Pasteur Inc. (Connaught and Pasteur Merieux) |
| | 0227 | | PRX | Praxis Biologics (Inactive – use WAL) |
| | 0227 | | PSC | Protein Sciences |
| | 0227 | | PWJ | Powderject Pharmaceutical |
| | 0227 | | SCL | Sclavo |
| | 0227 | | SEQ | Seqirus |
| | 0227 | | SKB | SmithKline |
| | 0227 | | SOL | Solvay Pharmaceuticals |

| Type | Table | Name | Value | Description |
|------|-------|--------------------------------|-------|--|
| | 0227 | | SI | Swiss Serum and Vaccine Inst. (Inactive – use BPC) |
| | 0227 | | TAL | Talecris Biotherapeutics (includes Bayer Biologicals) |
| | 0227 | | USA | United States Army Medical Research |
| | 0227 | | VAL | Valneva |
| | 0227 | | VXG | Vacgen |
| | 0227 | | WA | Wyeth-Ayerst (Inactive – use WAL) |
| | 0227 | | WAL | Wyeth |
| | 0227 | | ZLB | ZLB Behring (includes Aventis Behring and Armour Pharmaceutical Company (Inactive – use CSL) |
| | 0227 | | OTH | Other |
| | 0227 | | UNK | Unknown manufacturer |
| User | 0289 | County/parish (Wisconsin only) | | |
| | 0289 | | WI001 | Adams |
| | 0289 | | WI003 | Ashland |
| | 0289 | | WI005 | Barron |
| | 0289 | | WI007 | Bayfield |
| | 0289 | | WI009 | Brown |
| | 0289 | | WI011 | Buffalo |
| | 0289 | | WI013 | Burnett |
| | 0289 | | WI015 | Calumet |
| | 0289 | | WI017 | Chippewa |
| | 0289 | | WI019 | Clark |
| | 0289 | | WI021 | Columbia |
| | 0289 | | WI023 | Crawford |
| | 0289 | | WI025 | Dane |
| | 0289 | | WI027 | Dodge |
| | 0289 | | WI029 | Door |
| | 0289 | | WI031 | Douglas |
| | 0289 | | WI033 | Dunn |
| | 0289 | | WI035 | Eau Claire |
| | 0289 | | WI037 | Florence |
| | 0289 | | WI039 | Fond du Lac |
| | 0289 | | WI041 | Forest |
| | 0289 | | WI043 | Grant |
| | 0289 | | WI045 | Green |
| | 0289 | | WI047 | Green Lake |
| | 0289 | | WI049 | Iowa |
| | 0289 | | WI051 | Iron |
| | 0289 | | WI053 | Jackson |
| | 0289 | | WI055 | Jefferson |
| | 0289 | | WI057 | Juneau |
| | 0289 | | WI059 | Kenosha |
| | 0289 | | WI061 | Kewaunee |
| | 0289 | | WI063 | La Crosse |
| | 0289 | | WI065 | Lafayette |
| | 0289 | | WI067 | Langlade |
| | 0289 | | WI069 | Lincoln |
| | 0289 | | WI071 | Manitowoc |
| | 0289 | | WI073 | Marathon |
| | 0289 | | WI075 | Marinette |
| | 0289 | | WI077 | Marquette |
| | 0289 | | WI078 | Menominee |
| | 0289 | | WI079 | Milwaukee |
| | 0289 | | WI081 | Monroe |
| | 0289 | | WI083 | Oconto |

| Type | Table | Name | Value | Description |
|------|--------|---------------------------------|-------|--|
| | 0289 | | WI085 | Oneida |
| | 0289 | | WI087 | Outagamie |
| | 0289 | | WI089 | Ozaukee |
| | 0289 | | WI091 | Pepin |
| | 0289 | | WI093 | Pierce |
| | 0289 | | WI095 | Polk |
| | 0289 | | WI097 | Portage |
| | 0289 | | WI099 | Price |
| | 0289 | | WI101 | Racine |
| | 0289 | | WI103 | Richland |
| | 0289 | | WI105 | Rock |
| | 0289 | | WI107 | Rusk |
| | 0289 | | WI109 | St. Croix |
| | 0289 | | WI111 | Sauk |
| | 0289 | | WI113 | Sawyer |
| | 0289 | | WI115 | Shawano |
| | 0289 | | WI117 | Sheboygan |
| | 0289 | | WI119 | Taylor |
| | 0289 | | WI121 | Trempeleau |
| | 0289 | | WI123 | Vernon |
| | 0289 | | WI125 | Vilas |
| | 0289 | | WI127 | Walworth |
| | 0289 | | WI129 | Washburn |
| | 0289 | | WI131 | Washington |
| | 0289 | | WI133 | Waukesha |
| | 0289 | | WI135 | Waupaca |
| | 0289 | | WI137 | Waushara |
| | 0289 | | WI139 | Winnebago |
| | 0289 | | WI141 | Wood |
| NIP | NIP001 | Immunization Information Source | | |
| | NIP001 | | 00 | New Immunization Record |
| | NIP001 | | 01 | Historical Information |
| NIP | NIP002 | Substance Refusal Reason | | |
| | NIP002 | | 00 | Parental Refusal |
| | NIP002 | | 01 | Religious Exemption |
| NIP | NIP004 | Contraindications, Precautions | | |
| | NIP004 | | 03 | Allergy to baker's yeast (anaphylactic) |
| | NIP004 | | 04 | Allergy to egg ingestion (anaphylactic) |
| | NIP004 | | 05 | Allergy to nfluen (anaphylactic) |
| | NIP004 | | 06 | Allergy to neomycin (anaphylactic) |
| | NIP004 | | 07 | Allergy to streptomycin (anaphylactic) |
| | NIP004 | | 08 | Allergy to thimerosal (anaphylactic) |
| | NIP004 | | 09 | Allergy to previous dose of this vaccine or to any of its unlisted vaccine components (anaphylactic) |
| | NIP004 | | 10 | Anaphylactic (life-threatening) reaction of previous doses of this vaccine |
| | NIP004 | | 11 | Collapse or shock like state within 48 hours of previous dose of DTP/DtaP |
| | NIP004 | | 12 | Convulsions (fits, seizures) within 3 days of previous dose of DTP/DtaP |
| | NIP004 | | 13 | Persistent, inconsolable crying lasting 3 hours within 48 hours of previous dose of DTP/DtaP |
| | NIP004 | | 14 | Current diarrhea, moderate to severe |
| | NIP004 | | 15 | Encephalopathy within 7 days of previous dose of DTP |
| | NIP004 | | 16 | Current fever with moderate-to-severe illness |
| | NIP004 | | 17 | Fever of 40.5 C (105 F) within 48 hours of previous dose of DTP/DtaP |
| | NIP004 | | 18 | Gullain-Barre syndrome (GBS) within 6 weeks of previous dose of DTP/DtaP |

| Type | Table | Name | Value | Description |
|------|--------|------|-------|---|
| | NIP004 | | 21 | Current acute illness, moderate to severe (with or without fever) (e.g. diarrhea, otitis media, vomiting) |
| | NIP004 | | 22 | Chronic illness |
| | NIP004 | | 23 | Immune globulin (IG) administration, recent or simultaneous |
| | NIP004 | | 24 | Immunity: diphtheria |
| | NIP004 | | 25 | Immunity: Haemophilus influenzae type B (Hib) |
| | NIP004 | | XA | Immunity: hepatitis A |
| | NIP004 | | 26 | Immunity: hepatitis B |
| | NIP004 | | 27 | Immunity: measles |
| | NIP004 | | 28 | Immunity: mumps |
| | NIP004 | | 29 | Immunity: pertussis |
| | NIP004 | | 30 | Immunity: poliovirus |
| | NIP004 | | 42 | Immunity: rabies |
| | NIP004 | | 31 | Immunity: rubella |
| | NIP004 | | 32 | Immunity: tetanus |
| | NIP004 | | 33 | Immunity: varicella (chicken pox) |
| | NIP004 | | XC | History of Varicella |
| | NIP004 | | 34 | Immunodeficiency (family history) |
| | NIP004 | | 35 | Immunodeficiency (household contact) |
| | NIP004 | | 36 | Immunodeficiency |
| | NIP004 | | 37 | Neurologic disorders |
| | NIP004 | | 38 | Otitis media (ear infection) moderate to severe (with or without fever) |
| | NIP004 | | CP | Pertussis contraindication and precautions |

| Type | Table | Name | Value | Description |
|------|--------|-------------------------------|------------------|--|
| | NIP004 | | 39 | Pregnancy (in recipient) |
| | NIP004 | | CT | Tetanus contraindication – allergic reaction |
| | NIP004 | | 40 | Thrombocytopenia |
| | NIP004 | | 41 | Thrombocytopenic purpura (history) |
| | NIP004 | | CI | Contact with Infant(s) less than 6 months of age |
| | NIP004 | | HR | High Risk Condition(s) |
| NIP | NIP005 | Event Consequence | | |
| | NIP005 | | D | Patient Died |
| | NIP005 | | L | Life threatening illness |
| | NIP005 | | E | Required emergency room/doctor visit |
| | NIP005 | | H | Required hospitalization |
| | NIP005 | | P | Resulted in prolongation of hospitalization |
| | NIP005 | | J | Resulted in permanent disability |
| NIP | NIP006 | Patient Registry Status | | |
| | NIP006 | | A | Active |
| | NIP006 | | N | Inactive |
| | NIP006 | | P | Permanently inactive |
| WIR | WIR001 | Reaction Codes | | |
| | WIR001 | | HYPOTON | Hypotonic-hyporesponsive collapse within 48 hours of immunization |
| | WIR001 | | SEIZURE | Seizure occurring within 3 days |
| | WIR001 | | CRYING | Persistent crying lasting >= 3 hours within 48 hours of immunization |
| | WIR001 | | FEVER105 | Temperature >= 105 (40.5 C) within 48 hours of immunization |
| WIR | 99W01 | WIR Student Information Codes | | |
| | 99W01 | | FERPA | FERPA Release |
| | 99W01 | | GRADYEAR | Graduation Year |
| | 99W01 | | ENROLLDATE | Date Enrolled in WI School |
| WIR | WVGC | Vaccine Group Code (WVGC) | | |
| | WVGC | | Adeno | Adeno |
| | WVGC | | Anthrax | Anthrax |
| | WVGC | | BCG | BCG |
| | WVGC | | Cholera | Cholera |
| | WVGC | | Diphtheria | Diphtheria Antitoxin |
| | WVGC | | DTP/aP | Diphtheria, Tetanus, Acellular Pertussis |
| | WVGC | | Encephalitis | Encephalitis |
| | WVGC | | HepA | Hepatitis A |
| | WVGC | | HepB | Hepatitis B |
| | WVGC | | Hib | Hib |
| | WVGC | | HPV | Human Papilloma Virus |
| | WVGC | | Ig | Ig |
| | WVGC | | IG-RSV | Respiratory syncytial virus Ig |
| | WVGC | | Influenza | Influenza |
| | WVGC | | Influenza A H1N1 | Novel Influenza A H1N1 |
| | WVGC | | Lyme | Lyme |
| | WVGC | | Measles | Measles Virus Vaccine |
| | WVGC | | MMR | Measles, Mumps, Rubella |
| | WVGC | | Meningo | Meningitis |
| | WVGC | | Meningo B | Meningitis B |
| | WVGC | | Mumps | Mumps Virus Vaccine |
| | WVGC | | Pertussis | Pertussis |
| | WVGC | | Plague | Plague |
| | WVGC | | Pneumococcal | Pneumococcal Conjugate |
| | WVGC | | Pneumo-Poly | Pneumonia Polysaccharide |
| | WVGC | | Polio | Poliomyelitis |

| Type | Table | Name | Value | Description |
|------|-------|----------------------------------|--------------------------|--|
| | WVGC | | Rabies | Rabies |
| | WVGC | | Rotavirus | Rotavirus |
| | WVGC | | Rubella | Rubella Virus Vaccine |
| | WVGC | | Tetanus | Tetanus Diphtheria |
| | WVGC | | Td | Tetanus Diphtheria |
| | WVGC | | Typhoid | Typhoid |
| | WVGC | | Smallpox | Vaccinia |
| | WVGC | | Varicella | Varicella |
| | WVGC | | Yellow Fever | Yellow Fever |
| | WVGC | | Zoster | Zoster |
| WIR | WVTN | <u>Vaccine Trade Name (WVTN)</u> | | |
| | WVTN | | ACAM2000 | Smallpox |
| | WVTN | | Acel-Imune | Diphtheria, tetanus, acellular pertussis |
| | WVTN | | ActHib | Hemophilus influenza b PRP-T 4 dose |
| | WVTN | | Adacel | Tdap > 7 years |
| | WVTN | | Adeno T4 | Adenovirus type 4, live oral |
| | WVTN | | Adeno T7 | Adenovirus type 7, live oral |
| | WVTN | | AFLURIA | Influenza split virus |
| | WVTN | | AFLURIA, P-free | Influenza preservative free |
| | WVTN | | AFLURIA Quadrivalent | Influenza quadrivalent |
| | WVTN | | AFLURIA Quad, P-Free | Influenza quadrivalent preservative free |
| | WVTN | | Agriflu, P-free | Influenza preservative free |
| | WVTN | | Anthrax | Anthrax |
| | WVTN | | Attenuvax | Measles live |
| | WVTN | | BabyBIG | Botulism Immune Globulin |
| | WVTN | | BayTet | Tetanus Ig human |
| | WVTN | | BCG-Cancer | Bacillus Calmette-Guerin bladder cancer |
| | WVTN | | BCG-TB | Bacillus Calmette-Guerin TB |
| | WVTN | | Bexsero | Meningococcal B, recombinant, OMV, adjuvanted |
| | WVTN | | Biavax II | Rubella and mumps live |
| | WVTN | | BIG | Botulism Immune Globulin |
| | WVTN | | BioThrax | Anthrax |
| | WVTN | | Boostrix | Tdap > 7 years |
| | WVTN | | Botulinum-antitoxin | Botulinum antitoxin equine |
| | WVTN | | Botulism | Botulism Immune Globulin |
| | WVTN | | Certiva | Diphtheria, tetanus, acellular pertussis |
| | WVTN | | Cervarix | Human Papilloma Virus, Bivalent |
| | WVTN | | CMV-IgIV | Cytomegalovirus Ig IV human |
| | WVTN | | Comvax | HepB-Hib Combination |
| | WVTN | | DAPTACEL | Diphtheria, tetanus, acellular pertussis, 5 antigens |
| | WVTN | | DECAVAC | Td , preservative free |
| | WVTN | | Diphtheria | Diphtheria |
| | WVTN | | Diphtheria-antitoxin | Diphtheria antitoxin, equine |
| | WVTN | | Dryvax | Vaccinia(Smallpox) dry |
| | WVTN | | DT | Diphtheria tetanus pediatric |
| | WVTN | | DTP | Diphtheria, tetanus, whole cell pertussis |
| | WVTN | | Engerix-B Adult | Hepatitis B adult dose 1ml |
| | WVTN | | Engerix-B dialysis | HepB-Dialysis 4 dose |
| | WVTN | | Engerix-B Peds | Hepatitis B pediatric/adolescent .5ml |
| | WVTN | | Flebogamma | Ig IV human |
| | WVTN | | Flu-Imune | Influenza split virus |
| | WVTN | | Flu-Shield | Influenza split virus |
| | WVTN | | FLUAD | Influenza Trivalent Adjuvanted |
| | WVTN | | Fluarix, P-free | Influenza preservative free |
| | WVTN | | Fluarix Quadrivalent, P- | Influenza quadrivalent preservative free |

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

| Type | Table | Name | Value | Description |
|------|-------|------|-------------------------------|---|
| | WVTN | | Flublok | Influenza recombinant preservative free |
| | WVTN | | Flublok Quadrivalent | Influenza Quadrivalent Recombinant P-Free |
| | WVTN | | Flucelvax | Influenza MDCK preservative free |
| | WVTN | | Flucelvax Quadrivalent | Influenza, MDCK Quadrivalent |
| | WVTN | | Flucelvax Quadrivalent P-Free | Influenza MDCK Quadrivalent preservative free |
| | WVTN | | FluLaval | Influenza split virus |
| | WVTN | | FluLaval, P-free | Influenza preservative free |
| | WVTN | | FluLaval Quad, P-Free | Influenza quadrivalent preservative free |
| | WVTN | | FluLaval Quadrivalent | Influenza, injectable, quadrivalent |
| | WVTN | | FluMist | Influenza live, for intranasal use |
| | WVTN | | FluMist Quadrivalent | Flu-nasal quadrivalent |
| | WVTN | | Fluogen | Influenza split virus |
| | WVTN | | Fluvirin | Influenza split virus |
| | WVTN | | Fluvirin, P-free | Influenza preservative free |
| | WVTN | | Fluzone | Influenza split virus |
| | WVTN | | Fluzone High-Dose | Influenza split virus increased antigen content |
| | WVTN | | Fluzone Intradermal | Influenza, seasonal, intradermal, p-free |
| | WVTN | | Fluzone Intradermal Quad | influenza, intradermal, quadrivalent, preservative free |
| | WVTN | | Fluzone, P-free | Influenza preservative free |
| | WVTN | | Fluzone Quad | Fluzone Quadrivalent |
| | WVTN | | Fluzone Quad PF 6-35M | Influenza quadrivalent, preservative free 6 month to 3 year dosage |
| | WVTN | | Fluzone Quadrivalent, P-Free | Influenza quadrivalent preservative free |
| | WVTN | | Gardasil | Human Papilloma Virus, Quadrivalent |
| | WVTN | | Gardasil 9 | Human Papilloma Virus, 9-valent |
| | WVTN | | Havrix-Adult | Hepatitis A adult |
| | WVTN | | Havrix-Peds 2 Dose | Hepatitis A pediatric/adolescent 2 dose |
| | WVTN | | Havrix-Peds 3 Dose | Hepatitis A pediatric/adolescent 3 dose |
| | WVTN | | HBIG | Hepatitis B Ig human |
| | WVTN | | Hepilisav-B | Hepatitis B, adjuvanted |
| | WVTN | | Hib-TITER | Hemophilus influenza b HbOC 4 dose |
| | WVTN | | Hiberix | Hemophilus influenza b PRP-T 4 dose |
| | WVTN | | HyperTET | Tetanus immune globulin human |
| | WVTN | | H1N1 MED Nasal | H1N1 live, for intranasal use |
| | WVTN | | H1N1 P-free CSL | H1N1 monovalent inactivated preservative free |
| | WVTN | | H1N1 P-free NOV | H1N1 monovalent inactivated preservative free |
| | WVTN | | H1N1 P-free SAN | H1N1 monovalent inactivated preservative free |
| | WVTN | | H1N1 CSL | H1N1 monovalent inactivated |
| | WVTN | | H1N1 NOV | H1N1 monovalent inactivated |
| | WVTN | | H1N1 SAN | H1N1 monovalent inactivated |
| | WVTN | | Ig | Ig human |
| | WVTN | | IgIV | Ig IV human |
| | WVTN | | Imovax Rabies ID | Rabies intradermal |
| | WVTN | | Imovax Rabies IM | Rabies intramuscular |
| | WVTN | | Infanrix | Diphtheria, tetanus, acellular pertussis |
| | WVTN | | IPOL | Poliovirus inactivated IPV |
| | WVTN | | Ixiaro | Japanese Encephalitis for Intramuscular use |
| | WVTN | | JE-Vax | Japanese Encephalitis for Subcutaneous use |
| | WVTN | | KINRIX | DTaP-IPV combination |
| | WVTN | | LYMERix | Lyme disease |
| | WVTN | | M-R-VAX | Measles and rubella live |
| | WVTN | | Measles | Measles live 1964-1974 |
| | WVTN | | Measles-Rubella (MERU) | Measles and rubella live |
| | WVTN | | Menactra | Meningococcal polysaccharide [groups A, C, Y and W- |

| Type | Table | Name | Value | Description |
|------|-------|------|-------|--|
| | | | | 135] diphtheria toxoid conjugate vaccine |

| Type | Table | Name | Value | Description |
|------|-------|------|------------------------------|--|
| | WVTN | | MenHibrix | Meningococcal-Hib combination |
| | WVTN | | MENOMUNE | Meningococcal polysaccharide |
| | WVTN | | Menveo | Meningococcal oligosaccharide [groups A, C, Y and W-135] diphtheria toxoid conjugate vaccine |
| | WVTN | | Meruvax II | Rubella live |
| | WVTN | | MMR II | Measles, mumps and rubella live |
| | WVTN | | Mumps | Mumps |
| | WVTN | | Mumps-Rubella (MURU) | Rubella and mumps live |
| | WVTN | | Mumpsvax | Mumps live |
| | WVTN | | OmniHib | Hemophilus influenza b PRP-T 4 dose |
| | WVTN | | ORIMUNE | Poliovirus OPV live oral |
| | WVTN | | Pediarix | DTAP-HepB-Polio combination |
| | WVTN | | Pentacel | DtaP-Hib-IPV combination |
| | WVTN | | PedvaxHIB | Hemophilus influenza b OMP 3 dose |
| | WVTN | | Plague | Plague |
| | WVTN | | Pneumovax 23 | Pneumococcal polysaccharide 23 valent |
| | WVTN | | PNU-IMUNE 23 | Pneumococcal polysaccharide 23 valent |
| | WVTN | | Prevnar | Pneumococcal conjugate polyvalent |
| | WVTN | | Prevnar 13 | Pneumococcal 13-valent conjugate |
| | WVTN | | ProHIBit | Hemophilus influenza b PRP-D booster |
| | WVTN | | ProQuad | Measles, mumps, rubella, varicella live |
| | WVTN | | Quadracel | DtaP-IPV combination |
| | WVTN | | RabAvert | Rabies intramuscular |
| | WVTN | | Recombivax Peds | Hepatitis B pediatric/adolescent .5ml |
| | WVTN | | Recombivax-Adult | Hepatitis B adult dose 1ml |
| | WVTN | | Recombivax-Dialysis | Hepatitis B Dialysis 4 dose |
| | WVTN | | Respigam | Respiratory syncytial virus Ig IV |
| | WVTN | | Rho(D)Full | Rho(D)Ig Rhlg human full-dose |
| | WVTN | | Rho(D)IV | Rho(D)Ig Rhlg human IV |
| | WVTN | | Rho(D)Mini | Rho(D)Ig Rhlg human mini-dose |
| | WVTN | | Rig | Rabies Ig human |
| | WVTN | | Rig-HT | Rabies Ig heat treated human |
| | WVTN | | Rotarix | Rotavirus-RV1 |
| | WVTN | | RotaShield | Rotavirus tetravalent live oral |
| | WVTN | | RotaTeq | Rotavirus pentavalent |
| | WVTN | | RSV-IgIV | Respiratory syncytial virus Ig IV |
| | WVTN | | Rubella | Rubella live |
| | WVTN | | Shingrix | Zoster (shingles), subunit |
| | WVTN | | Synagis | Respiratory syncytial virus Ig |
| | WVTN | | Td | Tetanus and diphtheria adult |
| | WVTN | | TENIVAC | Td , preservative free |
| | WVTN | | Tetramune | DTP – Hib combination |
| | WVTN | | Tig | Tetanus Ig human |
| | WVTN | | TriHIBit | DtaP-Hib combination |
| | WVTN | | Tripedia | Diphtheria, tetanus, acellular pertussis |
| | WVTN | | Trumenba | Meningococcal B, fully recombinant |
| | WVTN | | TT | Tetanus |
| | WVTN | | Twinrix | Hepatitis A & Hepatitis B adult |
| | WVTN | | Typhim Vi | Typoid VI capsular polysaccharide |
| | WVTN | | Typhoid | Typhoid heat and phenol inactivated |
| | WVTN | | Typhoid-AKD | Typhoid acetone-killed, dried |
| | WVTN | | Vaccinia (smallpox), diluted | Vaccinia (smallpox), diluted |
| | WVTN | | Vaccinia immune globulin VIG | Vaccinia immune globulin VIG |
| | WVTN | | VAQTA-Adult | Hepatitis A adult |

| Type | Table | Name | Value | Description |
|------|-------|------|---------------------|---|
| | WVTN | | VAQTA-Peds 2 Dose | Hepatitis A pediatric/adolescent 2 dose |
| | WVTN | | Varivax | Varicella live |
| | WVTN | | Vaxchora | Cholera, live attenuated |
| | WVTN | | Vivotif Berna/Ty21a | Typhoid oral |
| | WVTN | | VZIg | Varicella-zoster Ig human |
| | WVTN | | YF-VAX | Yellow Fever live |
| | WVTN | | Stamaril | Alternate yellow fever vaccine |
| | WVTN | | Zostavax | Zoster (shingles), live |

CPT Codes (WCPT) and CVX Codes (292)

| CPT | CVX | Group | Vaccine | Trade Name | Description | MFG |
|-------|-----|------------------|--|---|--|------------|
| 90476 | 54 | Adeno | Adeno T4 | Adeno T4 | Adenovirus type 4, live oral | WAL |
| 90477 | 55 | | Adeno T7 | Adeno T7 | Adenovirus type 7, live oral | WAL |
| | 82 | | Adeno, unspecified formulation | | Recorded as CVX 55 | |
| 90581 | 24 | Anthrax | Anthrax | Anthrax | Anthrax | MIP |
| | | | | BioThrax | | |
| 90585 | 19 | BCG | BCG-TB | BCG-TB | Bacillus Calmette-Guerin TB | OTC |
| 90586 | | | BCG-BC | BCG-Cancer | Bacillus Calmette-Guerin bladder cancer | OTC |
| 90728 | | | BCG | | BCG | |
| 90625 | 174 | Cholera | Cholera, live attenuated | Vaxchora | Cholera, live attenuated | PAX |
| 90725 | 26 | | Cholera, unspecified formulation | | Cholera, unspecified formulation | |
| 90719 | | Diphtheria | Diphtheria | Diphtheria | Diphtheria | PD |
| 90700 | 20 | DTP/aP | DTaP | Acel-Imune | Diphtheria, tetanus, acellular pertussis | WAL |
| | | | | Certiva | | BAH |
| | | | | Infanrix | | SKB |
| | | | | Tripedia | | PMC |
| 90701 | 01 | | DTP | DTP | Diphtheria, tetanus, whole cell pertussis | PMC |
| 90702 | 28 | | DT | DT | Diphtheria tetanus pediatric | PMC |
| 90720 | 22 | | DTP-Hib | Tetramune | DTP – Hib combination | WAL |
| 90721 | 50 | | DTaP-Hib | TriHIBit | DtaP-Hib combination | PMC |
| 90723 | 110 | | DTAP-HepB-Polio | Pediarix | DTAP-HepB-Polio combination | SKB |
| 90696 | 130 | | DTaP-IPV | KINRIX | DTaP-IPV combination | SKB |
| | | | | Quadracel | | PMC |
| 90698 | 120 | | DtaP-Hib-IPV | Pentacel | DtaP-Hib-IPV combination | PMC |
| | 106 | | DTAP, 5 pertussis antigens | DAPTACEL | Diphtheria, tetanus, acellular pertussis, 5 antigens | PMC |
| | 107 | | DTaP, unspecified formulation | | Recorded as CVX 20 | |
| 90735 | 39 | Encephalitis | Japanese Encephalitis-SC | JE-Vax | Japanese encephalitis for Subcutaneous use | JPN |
| 90738 | 134 | | Japanese Encephalitis-IM | Ixiaro | Japanese encephalitis for Intramuscular use | VAL |
| | 129 | | Japanese Enceph, unspecified formulation | | Japanese Enceph, unspecified formulation | |
| 90632 | 52 | HepA | HepA adult | Havrix-Adult | Hepatitis A adult | SKB |
| | | | | VAQTA-Adult | | MSD |
| 90633 | 83 | | HepA-Ped 2 Dose | Havrix-Peds 2 Dose VAQTA-Peds 2 Dose | Hepatitis A pediatric/adolescent 2 dose | SKB MSD |
| 90634 | 84 | | HepA -Peds | Havrix-Peds 3 Dose | Hepatitis A pediatric/adolescent 3 dose | SKB MSD |
| 90636 | 104 | | HepA-HepB Adult | Twinrix | Hepatitis A & Hepatitis B adult | SKB |
| 90730 | 85 | | Hep A, unspecified formulation | | Hep A, unspecified formulation | |
| | 31 | | Hep A-Peds, unspecified formulation | | Recorded as CVX 85 | |
| 90636 | 104 | HepB | HepA-HepB Adult | Twinrix | Hepatitis A & Hepatitis B adult | SKB |
| 90723 | 110 | | DTAP-HepB-Polio | Pediarix | DTAP-HepB-Polio combination | SKB |
| 90731 | 45 | | Hep B, unspecified formulation | | Hep B, unspecified formulation | |
| 90739 | 189 | | Hep B, adjuvanted | HepBisav-B | Hepatitis B, adult dosage (2 dose schedule), for intramuscular use | DVX |
| 90740 | 44 | | Hep B-Dialysis 3 dose | | Hepatitis B Dialysis 3 dose | |
| 90743 | 43 | | HepB adult | Recombivax-Adult | Hepatitis B adult dose 1ml | MSD |
| | | | | Engerix-B Adult | | SKB |
| 90744 | 08 | | HepB pediatric | Recombivax Peds | Hepatitis B pediatric/adolescent .5ml | MSD |
| | | | | Engerix-B Peds | | SKB |
| 90745 | 42 | | Hep B, adolescent/high risk infant | | Hep B, adolescent/high risk infant | |
| 90746 | 43 | | HepB adult | Recombivax-Adult | Hepatitis B adult dose 1ml | MSD |
| | | | | Engerix-B Adult | | SKB |
| 90747 | 44 | | HepB-Dialysis 4 dose | Recombivax-Dialysis | Hepatitis B Dialysis 4 dose | MSD |
| | | | | Engerix-B dialysis | | SKB |
| 90748 | 51 | HepB-Hib | Comvax | HepB-Hib Combination | MSD | |
| | | HepB-Unspecified | | | | |
| 90645 | 47 | Hib | Hib-HbOC | Hib-TITER | Hemophilus influenza b HbOC 4 dose | WAL |

| CPT | CVX | Group | Vaccine | Trade Name | Description | MFG |
|-------|-----|-----------|---|--------------------------|---|-------------------------------|
| 90646 | 46 | | Hib-PRP-D | ProHIBit | Hemophilus influenza b PRP-D booster | PMC |
| 90647 | 49 | | Hib-OMP | PedvaxHIB | Hemophilus influenza b OMP 3 dose | MSD |
| 90648 | 48 | | Hib-PRP-T | OmniHib | Hemophilus influenza b PRP-T 4 dose | PMC |
| | | | | ActHib | | PMC |
| | | | | Hiberix | | SKB |
| 90720 | 22 | | DTP-Hib | Tetramune | DTP – Hib combination | WAL |
| 90721 | 50 | | DTaP-Hib | TriHIBit | DtaP-Hib combination | PMC |
| 90737 | 17 | | Hib, unspecified formulation | | Hib,unspecified formulation | |
| 90748 | 51 | | HepB-Hib | Comvax | HepB-Hib combination | MSD |
| 90698 | 120 | | DtaP-Hib-IPV | Pentacel | DtaP-Hib-IPV combination | PMC |
| 90644 | 148 | | Meningococcal C/Y-HIB PRP | MenHibrix | Meningococcal-Hib combination | SKB |
| 90650 | 118 | HPV | HPV, Bivalent | Cervarix | Human Papilloma Virus | SKB |
| 90649 | 62 | | HPV, Quadrivalent | Gardasil | Human Papilloma Virus | MSD |
| 90651 | 165 | | HPV, 9-valent | Gardasil 9 | Human Papilloma Virus, 9-valent | MSD |
| | 137 | | HPV, unspecified formulation | | HPV, unspecified formulation | |
| 90281 | 86 | Ig | Ig | Ig | Ig human | |
| 90283 | 87 | | IgIV | IgIV | Ig IV human | |
| | | | | Fiebogamma | | |
| 90287 | 27 | | Botulinum-antitoxin | Botulinum-antitoxin | Botulinum antitoxin equine | |
| 90288 | | | Botulism | BabyBIG | Botulism Immune Globulin | |
| | | | | Botulism | | |
| | | | | BIG | | |
| 90291 | 29 | | CMV-IgIV | CMV-IgIV | Cytomegalovirus Ig IV human | |
| 90399 | 14 | | IG, unspecified formulation | | IG, unspecified formulation | |
| 90296 | 12 | | Diphtheria-antitoxin | Diphtheria-antitoxin | Diphtheria antitoxin, equine | |
| 90371 | 30 | | HBIG | HBIG | Hepatitis B Ig human | |
| 90375 | 34 | | Rig | Rig | Rabies Ig human | |
| 90376 | 34 | | RIg-HT | RIg-HT | Rabies Ig heat treated human | |
| 90384 | 157 | | Rho(D)Full | Rho(D)Full | Rho(D)Ig Rhlg human full-dose | |
| 90385 | 157 | | Rho(D)Mini | Rho(D)Mini | Rho(D)Ig Rhlg human mini-dose | |
| 90386 | | | Rho(D)IV | Rho(D)IV | Rho(D)Ig Rhlg human IV | |
| | 156 | | Rho(D) IM or IV | | Rho(D), unspecified formulation | |
| | 159 | | Rho(D), unspecified formulation | | Rho(D), unspecified formulation | |
| 90389 | 13 | | TiG | BayTet | Tetanus Ig human | |
| | | | | TiG | | |
| | | | | HyperTET | | Tetanus immune globulin human |
| 90393 | 79 | | Vaccinia immune globulin VIG | Vaccinia-Ig | VacciniaIg human | |
| 90396 | 36 | | VZIG | VZIG | Varicella-zoster Ig human | |
| | 117 | | VZIG (IND) | VariZIG | | |
| | | | Varicella IG | | | |
| 90378 | 93 | IG-RSV | RSV-IgIM | Synagis | Respiratory syncytial virus Ig | |
| 90379 | 71 | | RSV-IgIV | RSV-IgIV | Respiratory syncytial virus Ig IV | |
| | | | | Respigam | | |
| 90630 | 166 | Influenza | Influenza Intradermal Quadrivalent P-Free | Fluzone Intradermal Quad | influenza, intradermal, quadrivalent, preservative free | PMC |
| 90653 | 168 | | Influenza Trivalent Adjuvanted | FLUAD | Influenza trivalent adjuvanted | SEQ |
| 90654 | 144 | | Influenza Intradermal | Fluzone Intradermal | influenza, seasonal, intradermal, p-free | PMC |
| 90655 | 140 | | Influenza Preservative-Free | AFLURIA, P-free | Influenza preservative free 6 month to 3 year dosage | SEQ |
| | | | | Agriflu, P-free | | NOV |
| | | | | Fluarix, P-free | | SKB |
| | | | | Fluvirin, P-free | | SEQ |
| | | | | Fluzone, P-free | | PMC |
| 90656 | | | Influenza Preservative-Free | AFLURIA, P-free | Influenza preservative free 3 years and up dosage | SEQ |
| | | | | Agriflu, P-free | | NOV |
| | | | | Fluarix, P-free | | SKB |
| | | | | FluLaval, P-free | | SKB |
| | | | | Fluvirin, P-free | | SEQ |
| | | | | Fluzone, P-free | | PMC |
| 90657 | 141 | | Influenza | Flu-Imune | Influenza split virus 6 month to 3 year dosage | WAL |
| | | | | Flu-Shield | | WAL |
| | | | | Fluzone | | PMC |
| | | | | AFLURIA | | SEQ |
| | | | | Fluvirin | | SEQ |
| | | | | Fluogen | | PD |
| | | | | FluLaval | | SEQ |
| 90658 | | | Influenza | Flu-Imune | Influenza split virus 3 years and up dosage | WAL |
| | | | | Flu-Shield | | WAL |
| | | | | Fluzone | | PMC |
| | | | | AFLURIA | | SEQ |

| CPT | CVX | Group | Vaccine | Trade Name | Description | MFG | |
|-------|-----|------------------------------|--|--------------------------------|--|------------------------------------|-----|
| | | | | Fluvirin | | SEQ | |
| | | | | Fluogen | | PD | |
| | | | | FluLaval | | SEQ | |
| 90659 | 16 | | Influenza-Whole Virus | | Influenza whole virus | | |
| 90660 | 111 | | Flu-Nasal | FluMist | Influenza live, for intranasal use | MED | |
| 90661 | 153 | | Influenza MDCK Preservative-Free | Flucelvax | Influenza, injectable, MDCK, preservative free | NOV | |
| 90662 | 135 | | Influenza High Dose | Fluzone High-Dose | Influenza split virus increased antigen content | PMC | |
| 90672 | 149 | | Flu-Nasal Quadrivalent | FluMist Quadrivalent | Influenza quadrivalent live, for intranasal use | MED | |
| 90673 | 155 | | Influenza Recombinant P-Free | Flublok | Influenza, recombinant, injectable, preservative free | PSC | |
| 90674 | 171 | | Influenza MDCK Quadrivalent P-Free | Flucelvax Quadrivalent, P-Free | Influenza MDCK quadrivalent preservative free | SEQ | |
| 90682 | 185 | | Influenza Quad Recombinant P-Free | Flublok Quadrivalent | Influenza Quadrivalent recombinant P-Free | PSC | |
| 90685 | 161 | | Influenza Quadrivalent P-Free 6-35M | Fluzone Quad PF 6-35M | Influenza, injectable, quadrivalent, preservative free 6 month to 3 year dosage | PMC | |
| 90686 | 150 | | Influenza Quadrivalent P-Free | AFLURIA Quad, P-Free | Influenza, injectable, quadrivalent, preservative free 3 years and up dosage | SEQ | |
| | | Fluarix Quadrivalent, P-Free | | SKB | | | |
| | | FluLaval Quad, P-Free | | IDB | | | |
| | | Fluzone Quadrivalent, P-Free | | PMC | | | |
| 90687 | 158 | | Influenza Quadrivalent | Fluzone Quad | Influenza virus vaccine, quadrivalent, split virus, when administered to individuals 6-35 months of age, for intramuscular use | PMC | |
| 90688 | | AFLURIA Quadrivalent | | SEQ | | | |
| | | FluLaval Quadrivalent | | IDB | | | |
| | | Fluzone Quad | | PMC | | | |
| 90724 | 88 | | Influenza, unspecified formulation | | Influenza, unspecified formulation | | |
| | 151 | | Influenza Nasal, unspecified formulation | | Influenza Nasal, unspecified formulation | | |
| 90756 | 186 | | Influenza MDCK Quadrivalent | Flucelvax Quadrivalent | Influenza, MDCK, Quadrivalent | SEQ | |
| 90664 | 125 | Influenza A H1N1 | Novel Influenza A H1N1-Nasal | H1N1 MED Nasal | H1N1 live, for intranasal use | MED | |
| 90666 | 126 | | Novel Influenza A H1N1, P-free | H1N1 P-free CSL | H1N1 monovalent inactivated preservative free | CSL | |
| | | | | H1N1 P-free NOV | | NOV | |
| | | | | H1N1 P-free SAN | | PMC | |
| 90668 | 127 | | Novel Influenza A H1N1 | H1N1 CSL | H1N1 monovalent inactivated | CSL | |
| | | | | H1N1 NOV | | NOV | |
| | | | | H1N1 SAN | | PMC | |
| 90663 | 128 | | Novel Influenza A H1N1 all formulations | | H1N1 all formulations | | |
| 90665 | 66 | | Lyme | Lyme | LYMERix | Lyme disease | SKB |
| 90705 | 05 | | Measles | Measles | Measles | Measles live 1964-1974 (Eli Lilly) | MSD |
| | | Attenuvax | | | Measles live | MSD | |
| 90708 | 04 | Measles-Rubella | Measles-Rubella (MERU) | M-R-VAX | Measles and rubella live | MSD | |
| | | | | Measles-Rubella (MERU) | | MSD | |
| 90704 | 07 | Mumps | Mumps | Mumps | Mumps 1950-1978 | MSD | |
| | | | | Mumpsvax | Mumps live | MSD | |
| 90709 | | Rubella-Mumps, NOS | | | | | |
| | 38 | Rubella-Mumps | Rubella-Mumps | Biavax II | Rubella and mumps live | MSD | |
| | | | | Mumps-Rubella (MURU) | | MSD | |
| 90707 | 03 | MMR | MMR | MMR II | Measles, mumps and rubella live | MSD | |
| 90710 | 94 | MMRV | MMRV | ProQuad | Measles, mumps, rubella, varicella live | MSD | |
| 90733 | 32 | Meningo | Meningococcal-MPSV4 | MENOMUNE | Meningococcal polysaccharide | PMC | |

| CPT | CVX | Group | Vaccine | Trade Name | Description | MFG | |
|-------|-----|------------------------------------|--|--------------------------------|--|---|-----|
| 90734 | 114 | | Meningococcal-MCV4P | Menactra | Meningococcal polysaccharide [groups A, C, Y and W-135] diphtheria toxoid conjugate vaccine | PMC | |
| | 136 | | Meningococcal-MCV4O | Menveo | Meningococcal oligosaccharide [groups A, C, Y and W-135] diphtheria toxoid conjugate vaccine | NOV | |
| | 147 | | Meningococcal-MCV4 | | MCV4, unspecified formulation [groups A, C, Y and W-135] | | |
| | 108 | | Meningococcal, unspecified formulation | | Meningococcal, unspecified formulation | | |
| 90644 | 148 | | Meningococcal C/Y-HIB PRP | MenHibrix | Meningococcal-Hib combination | SKB | |
| 90621 | 162 | Meningo B | Meningococcal B, recombinant | Trumenba | Meningococcal B, fully recombinant | PFR | |
| 90620 | 163 | | Meningococcal B, OMV | Bexsero | Meningococcal B, recombinant, OMV, adjuvanted | SKB | |
| | 164 | | Meningococcal B, unspecified formulation | | Meningococcal B, unspecified formulation | | |
| 90715 | 115 | Pertussis | Tdap > 7 Years | Adacel | Tdap > 7 years | PMC | |
| | | | | Boostrix | | SKB | |
| | 11 | | Pertussis | | Pertussis vaccine | | |
| 90712 | 02 | Polio | Polio oral | ORIMUNE | Poliovirus OPV live oral | WAL | |
| 90713 | 10 | | Polio injectable | IPOL | Poliovirus inactivated IPV | PMC | |
| 90723 | 110 | | DTAP-HepB-Polio | Pediarix | DTAP-HepB-Polio combination | SKB | |
| 90696 | 130 | | DTaP-IPV | KINRIX | DTaP-IPV | | SKB |
| | | | | Quadracel | | | PMC |
| 90698 | 120 | | DtaP-Hib-IPV | Pentacel | DtaP-Hib-IPV combination | PMC | |
| | 89 | | | Polio, unspecified formulation | | Polio, unspecified formulation | |
| 90727 | 23 | Plague | Plague | Plague | Plague | GRE | |
| 90732 | 33 | Pneumo-Poly | Pneumococcal 23 | PNU-IMUNE 23 | Pneumococcal polysaccharide 23 valent | WAL | |
| | | | | Pneumovax 23 | | MSD | |
| 90669 | 100 | Pneumococcal | Pneumo-Conjugate 7 | Prevnar | Pneumococcal conjugate polyvalent | WAL | |
| 90670 | 133 | | Pneumo-Conjugate 13 | Prevnar 13 | Pneumococcal 13-valent conjugate | PFR | |
| | 109 | | Pneumococcal, unspecified formulation | | Pneumococcal, unspecified formulation | | |
| | 152 | | Pneumococcal Conjugate, unspecified | | Pneumococcal Conjugate, unspecified formulation | | |
| 90675 | 18 | Rabies | Rabies-intramuscular | | Rabies intramuscular | | |
| | 175 | | Rabies-intramuscular, Diploid cell culture | Imovax Rabies IM | Rabies intramuscular, diploid cell culture | PMC | |
| | 176 | | Rabies-intramuscular, Fibroblast culture | RabAvert | Rabies intramuscular, Fibroblast culture | SKB | |
| 90676 | 40 | | Rabies-intradermal | Imovax Rabies ID | Rabies intradermal | PMC | |
| 90726 | 90 | | Rabies, unspecified formulation | | Rabies, unspecified formulation | | |
| 90680 | 74 | | Rotavirus | Rotavirus, Tet | RotaShield | Rotavirus tetravalent live oral (removed on 10/16/1999) | WAL |
| | 116 | Rotavirus, Pent | | RotaTeq | Rotavirus pentavalent (after 02/02/2006) | MSD | |
| | 122 | Rotavirus, unspecified formulation | | | (between 10/16/1999 and 02/01/2006) | | |
| 90681 | 119 | | Rotavirus, monovalent | ROTARIX | | SKB | |
| 90706 | 06 | Rubella | Rubella | Rubella | Rubella live | MSD | |
| | | | | Meruvax II | | MSD | |
| 90708 | 04 | | Measles-Rubella | Measles-Rubella (MERU) | M-R-VAX | Measles and rubella live | MSD |
| | | | | | | | |
| 90709 | | | | Rubella-Mumps NOS | | Rubella-Mumps, NOS | |
| | 38 | | Rubella-Mumps | Mumps-Rubella (MURU) | Biavax II | Rubella and mumps live | MSD |
| | | MSD | | | | | |
| | 75 | Smallpox | Smallpox | ACAM2000 | Smallpox | PMC | |
| | | | Smallpox | Dryvax | Vaccinia(Smallpox) dry | WAL | |
| | 105 | Vaccinia (Smallpox), diluted | Vaccinia (smallpox), diluted | | | | |
| 90718 | 09 | Td | Td | Td | Tetanus and diphtheria adult | PMC MBL | |
| 90714 | 113 | | Td Preservative-Free | DECAVAC | Td preservative free – CPT code is effective for immunizations given on or after 7/1/2005 | | PMC |
| | | | | TENIVAC | | | |
| | | | | Td P-free | | | |
| 90715 | 115 | Tdap > 7 Years | Adacel | Tdap > 7 years | | PMC | |
| | | | Boostrix | | | SKB | |
| | 138 | | Td (adult) not adsorbed | | Td (adult) not adsorbed | | |

| CPT | CVX | Group | Vaccine | Trade Name | Description | MFG |
|-------|---------------------------------------|--------------|---|---------------------------------------|--|-----|
| | 139 | | Td (adult) unspecified formulation | | Td (adult) unspecified formulation | |
| 90703 | 35 | Tetanus | Tetanus | TT | Tetanus | PMC |
| | 142 | | Tetanus toxoid, not adsorbed | | Tetanus toxoid, not adsorbed | |
| | 112 | | Tetanus toxoid, unspecified formulation | | | |
| 90690 | 25 | Typhoid | Typhoid-oral | Vivotif Berna/Ty21a | Typhoid oral | |
| 90691 | 101 | | Typhoid-ViCPs | Typhim Vi | Typhoid VI capsular polysaccharide | PMC |
| 90692 | 41 | | Typhoid-HP | Typhoid | Typhoid heat and phenol inactivated | |
| 90693 | 53 | | Typhoid-AKD | Typhoid-AKD | Typhoid acetone-killed, dried (military) | |
| 90714 | 91 | | Typhoid, unspecified formulation | | Typhoid, unspecified formulation (after 7/1/2005, no CPT code is associated with this vaccine group) | |
| 90710 | 94 | Varicella | MMRV | ProQuad | | MSD |
| 90716 | 21 | | Varicella | Varivax | Varicella live | MSD |
| 90717 | 37 | Yellow Fever | Yellow Fever US | YF-VAX | Yellow Fever live | PMC |
| | 183 | | Yellow fever - alt | Stamaril | Alternate yellow fever vaccine | PMC |
| | | | Yellow fever | | Yellow fever US or yellow fever alternate | |
| 184 | Yellow fever, unspecified formulation | | | Yellow fever, unspecified formulation | | |
| 90736 | 121 | Zoster | Zoster (shingles), live | Zostavax | Zoster (shingles), live | MSD |
| 90750 | 187 | | Zoster (shingles), subunit | Shingrix | Zoster (shingles), subunit | SKB |
| | 188 | | Zoster, unspecified formulation | | Zoster, unspecified formulation | |

Appendix C – Error Messages

The following is a list of common error messages that WIR will return for validation of message format, datum values, and business rules.

| Msg. Type | Error Msg. Code | Error Status Text | Segment | Comp. | Sub Comp. | Error Message | |
|--------------|-----------------|------------------------|---------|-------|-----------|---------------|--|
| Update/Query | --- | ----- | MSH | | | Hard | NUMBER OF MESSAGES RECEIVED EXCEEDS 1 |
| Update/Query | --- | ----- | MSH | | | Hard | LONE MSH SEGMENT IN FILE |
| Update/Query | --- | ----- | MSH | 01 | | Hard | |
| Update/Query | 102 | Invalid Data Value | MSH | 02 | | Hard | MESSAGE REJECTED - INVALID ENCODING CHARACTERS |
| Update/Query | 101 | Required Field Missing | MSH | 04 | 02 | Hard | MESSAGE REJECTED - INVALID OWNING PROVIDER ORGANIZATION ID |
| Update/Query | | | MSH | 04 | | Hard | Record rejected. The provider organization that initiated this data exchange is not identified as a parent or vendor of the organization that it labeled as the "SENDING PROVIDER ORGANIZATION" for this record. |
| Update/Query | | | MSH | 04 | | Hard | Message rejected. - The initiating and owning providers do not have a relationship in the IR. |
| Update/Query | 100 | Segment Sequence Error | MSH | 09 | | Hard | MESSAGE REJECTED - INVALID MESSAGE TYPE SPECIFIED |
| Update/Query | 101 | Required Field Missing | MSH | 10 | | Hard | MESSAGE REJECTED - MESSAGE CONTROL ID IS A REQUIRED FIELD |
| Update/Query | --- | ----- | MSH | 12 | | Hard | UNSUPPORTED HL7 VERSION |
| Update | 102 | Invalid Data Value | PID | 03 | 05 | Hard | MESSAGE REJECTED - PATIENT IDENTIFIER TYPE OF PI OR PN OR PRN OR PT REQUIRED |
| Update | 101 | Required Field Missing | PID | 03 | | Hard | MESSAGE REJECTED - PATIENT IDENTIFIER LIST REQUIRED |
| Update | 101 | Required Field Missing | PID | 05 | 01 | Hard | MESSAGE REJECTED - PATIENT LAST NAME REQUIRED |
| Update | 102 | Invalid Data Value | PID | 05 | 01 | Hard | Message rejected. Client last name must be greater than one character in length. |
| Update | 102 | Invalid Data Value | PID | 05 | 01 | Hard | Message rejected. BABY is not a valid last name. |
| Update | 101 | Required Field Missing | PID | 05 | 02 | Hard | MESSAGE REJECTED - PATIENT FIRST NAME REQUIRED. |
| Update | 102 | Invalid Data Value | PID | 05 | 02 | Hard | Message rejected. Client first name must be greater than one character in length. |
| Update | 102 | Invalid Data Value | PID | 05 | 02 | Hard | Message rejected. BABY is not a valid first name. |
| Update | --- | ----- | PID | 05 | 02 | Hard | Record Rejected - Invalid first name (MALE1MELISSA). |
| Update | 101 | Required Field Missing | PID | 07 | | Hard | MESSAGE REJECTED - Date of birth is a required field |
| Update | 102 | Invalid Data Value | PID | 07 | | Hard | MESSAGE REJECTED - INVALID DATE OF BIRTH. MUST BE PRIOR TO OR EQUAL TO TODAY. |
| Update | 102 | Invalid Data Value | PID | 07 | | Hard | MESSAGE REJECTED - Invalid date of birth format |
| Update | 102 | Invalid Data Value | PID | 07 | | Hard | MESSAGE REJECTED - A VALID DATE OF BIRTH MUST BE SPECIFIED. |
| Update | 102 | Invalid Data Value | PID | 11 | 04 | Soft | Informational error - Invalid state code (Wisconsin). No value stored. |

| Msg. Type | Error Msg. Code | Error Status Text | Segment | Comp. | Sub Comp. | Error Message | |
|-----------|-----------------|------------------------|---------|-------|-----------|---------------|--|
| Update | 102 | Invalid Data Value | PID | 19 | | Soft | Informational error - Duplicate SSN. No value stored. |
| Update | 102 | Invalid Data Value | PID | 19 | | Soft | INFORMATIONAL ERROR - Invalid SSN. SSN either starts with 000 or ends with 0000. |
| Update | 102 | Invalid Data Value | PID | 19 | | Soft | INFORMATIONAL ERROR - Invalid SSN. SSN has 9 identical numbers. |
| Update | 102 | Invalid Data Value | PID | 19 | | Soft | INFORMATIONAL ERROR - Invalid SSN. SSN has an invalid pattern. |
| Update | 102 | Invalid Data Value | PID | 19 | | Soft | Invalid SSN. SSN has non-numeric characters. |
| Update | 102 | Invalid Data Value | PID | 19 | | Soft | Invalid SSN. SSN not 9 characters in length. |
| Update | | | PD1 | | | | |
| Update | 101 | Required Field Missing | NK1 | 02 | 02 | Soft | RELATIONSHIP MISSING FIRST NAME. NO VALUE STORED. |
| Update | 102 | Invalid Data Value | NK1 | 03 | 01 | Soft | INFORMATIONAL ERROR - NO RELATIONSHIP CODE SPECIFIED. DEFAULTING TO GUARDIAN |
| Update | 102 | Invalid Data Value | NK1 | 03 | 01 | Soft | INFORMATIONAL ERROR - INVALID RELATIONSHIP CODE. DEFAULTING TO GUARDIAN. |
| Update | --- | ----- | RXA | | | Hard | MESSAGE REJECTED - ALL RXA SEGMENTS INVALID. |
| Update | --- | ----- | RXA | | | | The incoming delete immunization does not match an existing immunization in WIR. This delete was not processed. |
| Update | --- | ----- | RXA | | | | The sending provider organization does not own the existing matched immunization in WIR. This delete was not processed. |
| Update | | | RXA | | | Hard | MESSAGE REJECTED - RXA SEGMENT REQUIRED FOR VXU MESSAGE TYPE. |
| Update | 102 | Invalid Data Value | RXA | 05 | | Hard | Invalid immunization INVALID ADMINISTERED CODE. |
| Update | 101 | Required Field Missing | RXA | 06 | | Hard | ADMINISTERED AMOUNT IS A REQUIRED FIELD. |
| Update | 102 | Invalid Data Value | RXA | 06 | | Hard | INFORMATIONAL ERROR - Invalid immunization INVALID ADMINISTERED AMOUNT |
| Update | --- | ----- | RXA | 09 | | Hard | RECORD REJECTED - 07 is not a valid immunization source for this provider organization. |
| Update | 101 | Required Field Missing | RXA | 10 | 02 | Soft | Administering provider last name is required to use administering provider field. |
| Update | 102 | Invalid Data Value | RXA | 10 | 02 | Soft | Informational error - Invalid administered by last name (Davis33 (Cerner)). No value stored. |
| Update | --- | ----- | RXA | 10 | 02 | Soft | Informational error - More than one clinician found to match (LAST_NAME, FIRST_NAME) |
| Update | --- | ----- | RXA | 17 | | Soft | Informational error - Trade Name (Pneumovax 23) not produced by manufacturer (WAL). Defaulting to unknown manufacturer. |
| Update | | | RXR | | | | |
| Update | 102 | Data type error | OBX | | | Soft | INVALID OBX SEGMENT - CONTRAINDICATION/PRECAUTION LOINC CODE SPECIFIED WITH IMMUNITY OBSERVATION VALUE. NO VALUE STORED. |
| Update | 102 | Data type error | OBX | 03 | | Hard | INVALID OBX SEGMENT - Required OBX-03 LOINC code is null or invalid |
| Update | 101 | Required Field Missing | OBX | 05 | | Hard | INVALID OBX SEGMENT - OBX-05 Observation value does NOT match observation coding system. |

| Msg. Type | Error Msg. Code | Error Status Text | Segment | Comp. | Sub Comp. | | Error Message |
|-----------|-----------------|------------------------|---------|-------|-----------|------|---|
| Update | 101 | Required Field Missing | OBX | 11 | | Hard | INVALID OBX SEGMENT - OBX-11 Observation Result status is a required field. |
| Update | 102 | Invalid Data Value | OBX | | | Soft | INACCURATE OR MISSING OBSERVATION VALUE. NO VALUE STORED. |
| Update | | | | | | Hard | Record rejected. Client may not be updated since the existing client that it matches does not consent to share immunizations with your organization. |
| Update | | | | | | | PID SEGMENT - INVALID SOCIAL SECURITY NUMBER. |
| Update | | | | | | | Record rejected. This immunization matches another immunization in incoming file. The incoming immunization that this system retained may be identified by the following characteristics -> Vaccination Date: 02232012. 0 |
| Query | | | QRD | | | Soft | Client has an 'Allow Sharing of Immunization Data' indicator = No. |
| Query | 101 | Required Field Missing | QRD | 01 | | Hard | MESSAGE REJECTED - Query Date is a required field |
| Query | 102 | Invalid Data Value | QRD | 01 | | Hard | MESSAGE REJECTED - Invalid Date format |
| Query | 102 | Invalid Data Value | QRD | 01 | | Hard | MESSAGE REJECTED - Invalid Query Date |
| Query | 101 | Required Field Missing | QRD | 02 | | Hard | MESSAGE REJECTED - Query Format Code is a required field |
| Query | 102 | Invalid Data Value | QRD | 02 | | Hard | MESSAGE REJECTED - Invalid Query Format Code |
| Query | 101 | Required Field Missing | QRD | 03 | | Hard | MESSAGE REJECTED - Query Priority is a required field |
| Query | 102 | Invalid Data Value | QRD | 03 | | Hard | MESSAGE REJECTED - Invalid Query Priority Code |
| Query | 101 | Required Field Missing | QRD | 04 | | Hard | MESSAGE REJECTED - Query ID is a required field |
| Query | 101 | Required Field Missing | QRD | 07 | 01 | Hard | MESSAGE REJECTED - Quantity Limited Request is a required field |
| Query | 102 | Invalid Data Value | QRD | 07 | 01 | Hard | MESSAGE REJECTED - Invalid Query Quantity |
| Query | 102 | Invalid Data Value | QRD | 07 | 02 | Hard | MESSAGE REJECTED - Invalid Query Units |
| Query | 101 | Required Field Missing | QRD | 08 | 02 | Hard | MESSAGE REJECTED - Last name required for Who Subject Filter |
| Query | 101 | Required Field Missing | QRD | 08 | 03 | Hard | MESSAGE REJECTED - First name required for Who Subject Filter |
| Query | 101 | Required Field Missing | QRD | 08 | | Hard | MESSAGE REJECTED - Who Subject Filter is a required field. |
| Query | 101 | Required Field Missing | QRD | 09 | 01 | Hard | MESSAGE REJECTED - What Subject Filter is a required field |
| Query | 102 | Invalid Data Value | QRD | 09 | 01 | Hard | MESSAGE REJECTED - Invalid What Subject Filter Identifier(s) |
| Query | 102 | Invalid Data Value | QRD | 10 | 01 | Hard | MESSAGE REJECTED - Invalid What Department Data Code(s). |
| Query | 101 | Required Field Missing | QRD | 10 | | Hard | MESSAGE REJECTED - What Department Data Code is a required field. |
| Query | 100 | Segment Sequence Error | QRF | | | Hard | MESSAGE REJECTED - QRF SEGMENT BEFORE QRD SEGMENT |
| Query | 101 | Required Field Missing | QRF | 01 | | Hard | MESSAGE REJECTED - WHERE SUBJECT FILTER IS A REQUIRED FIELD. |
| Query | 101 | Required Field Missing | QRF | 05 | 02 | Hard | MESSAGE REJECTED - Date of birth is a required field |
| Query | 102 | Invalid Data Value | QRF | 05 | 02 | Hard | MESSAGE REJECTED - Invalid date of birth format |

Document Updates

| Version No. | Version Date | Revised By | Description |
|--------------------|---------------------|-------------------|---|
| 1.0 | 1-Sep-2016 | Amanda Ray | Updated Vaccine and Manufacturer Tables |
| 1.1 | 12-Dec-2016 | Amanda Ray | Updated Vaccine and Manufacturer Tables |
| 1.2 | 20-Mar-2017 | Amanda Ray | Added Afluria Quad, Afluria Quad P-Free, and Quadracel vaccines |
| 1.3 | 11-Aug-2017 | Jayme Judd | Added Flublok Quadrivalent and Flucelvax Quadrivalent. Updated RabAvert and Imovax Rabies IM. |
| 1.4 | 13-Sept-2017 | Jayme Judd | Added Yellow Fever vaccines |
| 1.5 | 20-Sept-2017 | Jayme Judd | Updated Vaccine and Manufacturer Tables |
| 1.6 | 10-Nov-2017 | Jayme Judd | Updated Vaccine and Manufacturer Tables |
| 1.7 | 08-Dec-2017 | Rebekah Van Dusen | Added Zoster vaccines (Shingrix and unspec form). Added missing manufacturers. |
| 1.8 | 20-Feb-2018 | Amanda Ray | Updated Flulaval, P-free typo |
| 1.9 | 27-Feb-2018 | Mark Ehlke | Added Vaxchora information |
| 2.0 | 23-Mar-2018 | Mark Ehlke | Updated table for HepB related CVX codes, WVTN and related CVX. Updated manufacturer table. |
| 2.1 | 05-May-2018 | Mark Ehlke | Updated MFG for Bexsero to SKB. |