New York State Immunization Information System

HL7 – 2.4 Transfer Specification

GTS Version 1.6

Last Updated: June 2010

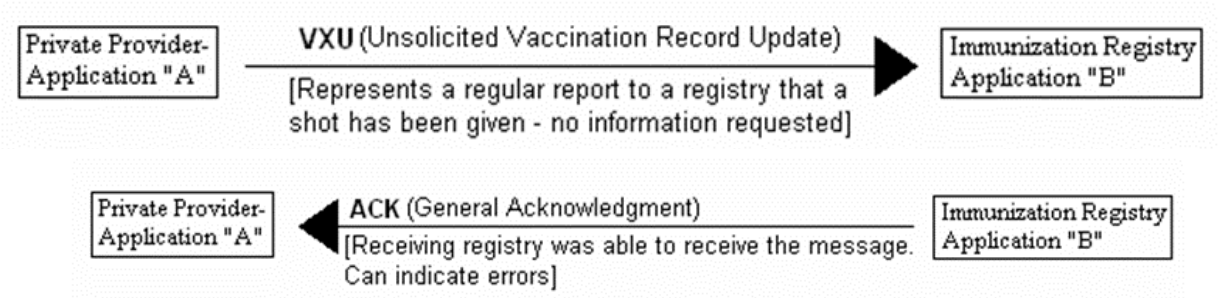
New York State Immunization Information System

HL7 – 2.4 Data Exchange Specification

Introduction

The New York State Immunization Information System (NYSIIS) has made available an interactive user interface on the World Wide Web for authorized NYS Health Information Network (HIN) and Health Provider Network (HPN) users to enter, query, and update patient immunization records. The Web interface makes NYSIIS information and functions available on desktops around the state. However, some immunization providers already store and process similar data in their own information systems and may wish to keep using those systems while also participating in the statewide central repository. Others may have different billing needs and may decide they don't want to enter data into two diverse systems. NYSIIS has been enhanced to accept HL7 Version 2.4 for batch loads to submit patient and immunization information to NYSIIS.

For instructions on how to do data exchange with NYSIIS please reference Chapter 13 of the User Manual.



The Health Level Seven (HL7) Standard

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

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

```
MSH|^~\&||VALLEY CLINIC^036||NYSIIS^^^|19991005032342||VXU^V04|682299|P^|2.4^^|||ER
PID|||79928^^^^PI|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 NYSIIS 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 with a provider organization id of '036' to NYSIIS. The message consists 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 NYSIIS from log-in information and not from an HL7 message.

- The Message Header segment (**MSH**) identifies the owner (**VALLEY CLINIC**) of the information being sent and the receiver (**NYSIIS**). It also identifies the message as being of type **VXU.** The VXU is an Unsolicited Vaccination Record Update, which is one of the message types defined by HL7.
- The Patient Identification segment (**PID**) gives the patient'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 may have more information included in it. Some segments can be repeated within a single message. In this example, the message could have included a second RXA segment to record another immunization given.

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. NYSIIS will use batch files of messages to communicate with outside systems.

Scope of This Document

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

References

- See Version 2.1 (September 2002) 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. It can be found at http://www.cdc.gov/vaccines/programs/iis/stds/standards.htm listed as 'Version 2.2-Implementation Guide for Immunization Data Transactions using Version 2.3.1 of the HL7 Standard Protocol.'.

HL7 Message Types Used in NYSIIS BATCH Transmissions

NYSIIS uses three message types for batch transmissions: ADT, VXU and ACK. The ADT is used for sending patient demographic information updates without any immunizations. The VXU is used for sending new and/or updated patient demographic information and immunizations. VXU may also be used to delete immunizations. The ACK is used to acknowledge to the sender that a message has been received. Table 1 below shows the segments that are used to construct each message type. Each segment is one line of text ending with the carriage return character. The carriage return is needed so that the HL7 messages are readable and printable. The messages may appear somewhat cryptic due to the scarcity of white space. (The standard has provisions for inclusion of binary data, but NYSIIS will not use these features.) Square brackets [ ] enclose optional segments and curly braces {} enclose segments that can be repeated; thus, an ADT message type could be composed of just MSH and PID segments. Also, any number of NK1 segments could be included in the message. The full HL7 standard allows additional segments within these message types, but they are unused by NYSIIS. In order to remain compliant with HL7, their use will not result in an error, but the recipient can ignore the content of the message. The segments that are documented here are sufficient to support the principal NYSIIS functions of storing data about patients and immunizations.

Table 1

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
[PV1]	Patient Visit
{RXA}	Pharmacy / Treatment Administration
[RXR]	Pharmacy / Treatment Route (Only one RXR per RXA segment)
[{OBX}]	Observation/Result*

ACK

General Acknowledgment

MSH	Message Header
MSA	Message Acknowledgment
[ERR]	Error

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

RECOMMENDATIONS:

NYSIIS will NOT accept an ADT message (unsolicited demographic update) for a new patient. ADT message is only used to update existing patient demographic information to patients existing in NYSIIS. Therefore, it is best to include the demographic information in a VXU message whenever possible, as this message type accommodates BOTH immunization information and demographic update information. If submitting a new patient it must follow the VXU message format for the new patient within the file.

When a VXU^V04(Unsolicited Vaccination Record Update) message type is sent with no RXA segment (immunization information), a check is done to verify if the patient exists in NYSIIS or not. If the patient already exists in NYSIIS, then the demographic update will occur(*if all other update business rules apply). If the patient is new to NYSIIS, then the patient will be rejected per current business rules that prohibit a new record being added without immunization information.

Message Segments: Field Specifications and Usage

HL7 Segment Structure

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

1.	**SEQ**	The ordinal position of the field in the segment. Since NYSIIS does not use all possible fields in the HL7 standard, these are not always consecutive.
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 means required by HL7, and M means mandatory for NYSIIS. Blank indicates an 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.
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 NYSIIS. The elemental data types Numeric (NM) and String (ST) consist of one value, while some data types, such as Extended Person Name (XPN) are composites.
- **Delimiter characters.** Field values of composite data types consist of several components separated by the **component separator**, "^". When components are further divided into sub-components, these are separated by the **sub-component separator**, "&". Some fields are defined to permit repetition separated by the **repetition character**, "~". When these special characters need to be included within text data, their special interpretations are prevented by preceding them with the **escape character**, "\".

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

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

In NYSIIS, sub-components, repetition and text values requiring the escape character will be rare. Components within fields are common, since names and addresses are represented this way. Although HL7 permits the use of other delimiters NYSIIS 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).

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 NYSIIS may include many segments besides the ones in this document, and NYSIIS ignores them. NYSIIS will not send messages with segments not documented in this specification, but reserves the right to specify more segments at a later date. The rule to ignore unexpected segments facilitates this kind of change.
- Ignore data fields found but not expected within a segment.

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

Columns are defined as

SEQ - Sequence of element in message
LEN – Length of field
DT - Data type
R/M - Field is required by HL7 to accept or mandated by NYS legislation. If no designation, it is considered optional.
RP# - This field can be reported
TB# - Approved corresponding code table

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 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 component containing the error (0 is used if not applicable) The remaining five components of the CE data type are not valued and their ‘^’ separators are not generated. Note that error text is transmitted in field MSA-3. 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	HD				Sending Application
4	180	HD				Sending Facility
5	180	HD				Receiving Application
6	180	HD				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. NYSIIS 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. NYSIIS requires the HL7 recommended values of ^~\&.

MSH-3 Name of the sending application. When sending, NYSIIS will use "NYSIIS" 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, NYSIIS will use "NYSIIS".

When the message is being sent to NYSIIS and the Provider Organization owning the information is different than the organization transmitting the message (as in a Parent/Child or Vendor/Client relationship), you must use the NYSIIS Provider ID of the Provider Organization that **owns** the information preceded by a component separator (e.g., ^36). You can add the short Provider Organization name in the component prior to the provider id (e.g., VALLEY CLINIC^036.) Contact the NYSIIS Help Desk for the appropriate organization ID.

Note: If the owner of the information and the transmitter of the information are the same Provider Organization, and the Provider Organization is not a member of a Parent/Child or Vendor/Client relationship, this field can be left blank. The data will be loaded with the transmitting organization as the owner of the immunization records. Since there is the potential for transmitting files under an incorrect Provider Organization, we highly encourage all users to indicate the owning provider organization id in MSH-4. This will allow the system to verify that you are transmitting from an organization that is the owner of the immunization records.

MSH-6 Identifies the message receiver. When sending, NYSIIS will use the short Provider Organization name assigned when the provider first registers with the NYSIIS database and NYSIIS-Web interface.

MSH-7 Date and time the message was created. NYSIIS 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 NYSIIS purposes, this field should have the value ADT^A31 for a message conveying patient information or the value VXU^V04 for a message conveying patient 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. Message rejection will result if nothing is received in this field. The message control ID is a string (which may be a number) uniquely identifying the message among all those ever sent by the sending system. It is assigned by the sending system and echoed back in the ACK message sent in response to identify the specific record which contains errors. *It is important to have this be an ID that the provider can use to identify the patient record.*

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

MSH-12 This is a required field. For the parser, the version number that is read in the first MSH segment, of the file, will be the version assumed for the whole file. For example, use a value of "2.3.1" to indicate HL7 Version 2.3.1or "2.4" to indicate HL7 Version 2.4.
*If there is no version number found in the first MSH segment, a hard error will occur and the file will not be processed.

**If submitting vfc eligibility information you must indicate "2.4".
**For NYSIIS to PO providers, the Exchange Data screen will need to be set to the version number that the organization has selected, in which to receive their data files. Setting the version number "tells" the writer which HL7 version format to use when generating the file in (the default will be the most recent version).

MSH-15 This field controls whether an acknowledgement is generated for the message sent. NYSIIS will accept a value of ER to ask that acknowledgements be sent only for messages that cannot be processed normally. If the field is empty, NYSIIS 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
3	**20**	**CX**	**R**	**Y**	**0203**	**Patient ID (Internal ID)**
5	**48**	**XPN**	**R**	**Y**		**Patient Name**
6	**48**	**XPN**	**M**	**Y**		**Mother's Maiden Name**
7	**26**	**TS**	**M**			**Date/Time of Birth**
8	**1**	**IS**	**M**		**0001**	**Sex**
10	80	CE		Y	0005	Race
11	106	XAD		Y		Patient Address
13	40	XTN				Phone number – home
22	80	CE		Y	0189	Ethnic Group
24	1	ID			0136	Multiple Birth Indicator
25	2	NM				Birth Order
29	26	TS				Patient Death Date and Time

Field Notes:

PID-3 Sub-components 1 (ID) and 5 (identifier type code) are required in the PID-3 field. When a Provider Organization is sending to NYSIIS, use the sending system's Patient ID or other identifier if available. When NYSIIS is sending to an outside system it will use the patient's NYSIIS ID and Patient ID when it is available.

PID-5 See the XPN data type. Last name and first name are required in the first two components. If the Name Type Code component is included, use L-Legal ***NOTE: If patient does not have a first name,* "NO FIRST NAME"*** ***must be entered. NYSIIS will not accept records where these fields are blank.*** NYSIIS 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 patient identification, NYSIIS uses only last name and first name. A mother's legal name might also appear in the context of an NK1 segment. NYSIIS does not support repetition of this field.

PID-7 Give the year, month, and day of birth (YYYYMMDD). NYSIIS ignores any time component.

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

PID-10 Use appropriate code . See Table 0005. NYSIIS stores and writes "Unknown" values as null. NYSIIS does not support repetition of this field.

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

PID-13 See the XTN data type. Version 2.4 includes the support of the N, X, B and C sequences. NYSIIS does not support repetition of this field. If PRN is specified in component 2 (telecommunication use code (ID) from table 0201) NYSIIS will use the 6th 7th 8th and 9th components for specification of area code, phone number, extension and text, respectively. Otherwise, NYSIIS will assume that the phone number is specified in the first component in the [NNN][(999)]999-9999[X99999][B99999][C any text] format

PID-22 Use appropriate code . See Table 0189. NYSIIS stores and writes "Unknown" values as null. NYSIIS supports repetition of this field.

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

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

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

PID-29 The date of death, if patient is deceased. Give the year, month, and day (YYYYMMDD). NYSIIS ignores any time component. If a death date is sent, then the Patient Registry Status in PD1-16 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
13	8	DT				Protection Indicator effective date
16	1	IS			0441	Immunization registry status
17	8	DT				Immunization registry status effective date
18	8	DT				Publicity Code effective date

Field Notes:

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

PD1-12 Indicates whether a patient (19 years or older) has signed a NYSIIS consent form granting permission to have their personal data created or modified in the registry. For patients Under 19 years of age, any value in this field is ignored because legislation automatically mandates their data for inclusion in the registry. For patients 19 years and older, if this field is filled with an 'N', indicating that the patient refused to give consent to have their records in NYSIIS, then the incoming record is rejected because it means that the patient is legally of age and does not consent to share. If the patient is 19 years of age or older and this field is left blank or null, then the incoming record is accepted only if it matches an existing NYSIIS record where a consent is already recorded in the registry, otherwise it is rejected. If the patient is 19 years of age or older and this field is filled with a 'Y' to indicate that the patient signed a NYSIIS consent form granting permission to have their records in NYSIIS, then the incoming record is accepted and either updates an existing record or creates a new consented record. The NYSIIS consent form is available on the NYSDOH website http://www.nyhealth.gov/prevention/immunization/information_system/providers/ as well as in the Forms section of the NYSIIS application. All health care providers are responsible for taking the appropriate steps to collect the necessary consent from individuals 19 years of age or older and must indicate in NYSIIS this consent to share information.

NOTE:
The Health Information Portability and Accountability Act (HIPAA) 45 CFR 164.502(b) imposes a "minimum necessary" standard on health care providers regarding disclosure of information, even when disclosures to the NYSDOH are required for public health activities. For those offices participating in electronic data submission to NYSIIS, the data file that leaves the health care provider's office should only contain information on individuals 19 years of age or older who have given their written consent to participate in NYSIIS.

Please make sure to take the appropriate steps to ensure that persons who are 19 years of age or older and have not signed a NYSIIS consent form have been excluded from your data extract file prior to submission to NYSIIS.

PD1-13 Effective date for protection indicator reported in PD1-12. Format is YYYYMMDD.

PD1-16 Identifies the registry status of the patient. See table NIP006. If a code of P is specified the PID-29 segment must be filled in with Patient Death Date or record will be rejected.

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

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

NK1

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

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, NYSIIS 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. NYSIIS does not support repetition of this field.

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

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

NK1-5 Responsible person's phone number. NYSIIS does not support repetition of this field. If PRN is specified in component 2 (telecommunication use code (ID) from table 0201) NYSIIS will use the 6th 7th 8th and 9th components for specification of area code, phone number, extension and text, respectively. Otherwise, NYSIIS will assume that the phone number is specified in the first component in the [NNN] [(999)]999-9999[X99999][B99999][C any text] format.

PV1

The PV1 segment is used to send visit-specific information.

SEQ	LEN	DT	R/M	RP/#	TBL#	ELEMENT NAME
2	**1**	**IS**	**R**		**0004**	**Patient Class**
20	**50**	**FC**	**M**	**Y**	**0064**	**Financial Class (VFC Eligibility)**

Field Notes:

PV1-2 See table 0004. NYSIIS will store and write a value of "R" (recurring patient) for this field.

PV1-20 See table 0064. NYSIIS defines this field as a required field and is used to report VFC eligibility. If an invalid financial class or date format is received, an INFORMATIONAL error message is generated. The entire message is NOT rejected, as this is an optional HL7 segment. The format of this field is Financial Class code as described in table 0064 ^ then the date in YYYYMMDD format. The date is used to associate the VFC eligibility code with shots administered starting with the same data. The VFC eligibility will report will be considered the current status until such time a new VFC eligibility and date is reported. This field can be repeated.

RXA

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

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

Field Notes:

RXA-1 Required by HL7. Use "0" for NYSIIS.

RXA-2 Required by HL7. For Provider-NYSIIS loads, Data Exchange expects incoming values of 999 for this field. Other numeric values are ignored.

NYSIIS Data Exchange sends out series information in this field, provided the system is configured to do so. For example, if a dose evaluates to (3 of 4) in the Wizard, then the system sends the number 3 in RXA-2. If the dose violates a specific Wizard rule, then the system sends 777 in RXA-2. In all other cases, the number 999 is sent in RXA-2. For combination vaccines, 999 is always sent in RXA-2, and the series count for each component antigen in the combination vaccine is sent in grouped OBX segments, which follow the RXA segment. Please see the field notes on OBX-3, OBX-4 and OBX-5.

The ability to send series information in RXA-2 only applies to HL7 Version 2.4. It applies to Batch HL7 NYSIIS-Provider, Batch HL7 Bi-directional, Real-time HL7, and Organizational Extract. Some configuration is needed to send series information in RXA-2. On the Manage Data Exchange Screen, the **Send HL7 Series/Recommend** option displays, and the user must select either "Series Only" or "Both" from the pick list. (This option is hidden if Flat File or HL7 Provider-NYSIIS is chosen.)

The Send Series/Recommend option also displays on the Organization Extract Screen when the user chooses the HL7 2.4 Transaction Format.

If the user configures the system so that it will **not** send series information, then the system always sends 999 RXA-2.

In the following example, the dose of Encephalitis is the 3rd dose in the series.

RXA|0|3|20010207|20010207|39^Japanese encephalitis^CVX^90735^Japanese encephalitis^CPT|1.0|||01^^^^^~32851911^NYSIIS immunization id^IMM_ID^^^||||||||||

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

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

RXA-5 This field identifies the vaccine administered. NYSIIS 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), NYSIIS – Table CPT (CPT Codes), NYSIIS – Table WVGC (Vaccine Group Codes), and NYSIIS – Table WVTN (Vaccine Trade Names).

RXA-6 Dose Magnitude is the number of age appropriate doses administered. For example, a dose magnitude of 2 of a pediatric formulation would be adequate for an adult. NYSIIS and HL7 require this field to contain a value. However, a value of 1.0 will be stored in its place.

RXA-9 NYSIIS will recognize 00 to indicate New Immunization Administered/Owned by the Sending Organization or 01 to indicate Historical Record – Source Unspecified. If the source for a historical record is known, please use values 02 through 08 in Table NIP001. For outgoing NYSIIS-Provider processing, Data Exchange will write out the corresponding immunization id in the second repeating segment.

NOTE:
If this field is left blank, the immunization will be recorded as *historic* (i.e. not owned by the sending organization) in NYSIIS.
***ALL* immunizations that were *administered* in your provider office should be recorded as "00" to ensure that the record is correctly associated with your organization in NYSIIS**

|00^^^^^~9999999^NYSIIS immunization id^IMM_ID^^^|

RXA-10 Identifies the name of the administering clinician (VEI), ordering authority (OEI), and recorder (REI) of the immunization in NYSIIS. The recorder is not supported on incoming data transfers and only returns if the immunization is owned by the provider requesting the data. NYSIIS will use components 2 – 7 to record the names.

For incoming loads, it is recommended that license information (LPN, RN, MD) be put in the 5th component so that it processes as the clinician suffix in NYSIIS, as in the following example:

|^GROBBERTS^DELIA^S^RN^MS^^^^^^^VEI^^~^SHAFFER^TERRENCE^P^MD^DR^^^^^^^OEI^^|

For incoming loads, the system automatically creates clinician records in NYSIIS if a match is not found.

RXA-11 NYSIIS 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. NYSIIS does not support repetition of this field.

RXA-17 Vaccine manufacturer from Table 0227, for example |AB^Abbott^ MVX^^^|. The HL7 2.4 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." NYSIIS 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. NYSIIS does not support repetition of this field.

Notes on Refusals:

a) NYSIIS 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) NYSIIS 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 patients who have them.

c) The NYSIIS 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-20 For Batch HL7 NYSIIS-PO, Batch HL7 Bi-directional and Organizational Extract, this field records the value PA for doses which are partially administered. A partially administered dose refers to the scenario where the patient jumps and the needle breaks, resulting in an unknown quantity of vaccine entering the patient's system.

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	4	SI				Set ID-OBX
2	3	ID				Value type
3	**80**	**CE**	**R**			**Observation Identifier**
4	20	ST				Observation sub-ID
5	**65536**	**-**	**M**	**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 Provider-NYSIIS data, Data Exchange accepts CE for Coded Entry. However, for NYSIIS-Provider, the system will send out values of CE, TS, NM for Coded Entry, Timestamp, and Number respectively, depending on what is actually sent in OBX-5.

OBX-3 When indicating a **Vaccination Contraindication/Precaution**, use 30945-0 in this field and enter a Contraindication, Precaution, or Immunity code (NIP004) in OBX-5.

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

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^NYSIIS^^^||||||F|

When indicating a **Vaccination Adverse Event Outcome**, use 30948-4 in this field and enter an Event Consequence code (NIP005) in OBX-5.

Example: OBX|1|CE|30948-4^Adverse Outcome^LN||E^er room^NIP^^^||||||F|

For Batch HL7 NYSIIS-Provider, Batch HL7 Bi-directional, Real-time HL7, and Organizational Extract, the system uses this field to send the LOINC Codes for **Series information** for combination vaccines. For each component of a combination vaccine, the system sends out a grouped set of two OBX segments. The first segment identifies the component antigen, and the second segment identifies the Series count. OBX-3 is used to identify whether the component antigen or the valid series count is noted in OBX-5 respectively.

Here are the LOINC Codes that the system sends in OBX-3 for Series information for combination vaccines.

LOINC Code	Description
38890-0	Component Vaccine Type. This term is used to distinguish separate vaccine components of a multiple antigen vaccine. Included in LOINC 1/2005.
38890-0&30973-2	Dose Number in Series

In the following example, the LOINC Codes are highlighted in OBX-3. These two OBX segments together express that a dose of combination vaccine counts for the 1st dose of DTaP in the DTaP series.

OBX|1|CE|38890-0^COMPONENT VACCINE TYPE^LN|1|20^DTaP^CVX^90700^DTaP^CPT||||||F|
OBX|2|NM|38890-0&30973-2^Dose number in series^LN|1|1||||||F|

Please see the end of the OBX field notes for a complete example of how NYSIIS sends Series information for combination vaccines.

For Batch HL7 NYSIIS-Provider, Batch HL7 Bi-directional, Real-time HL7, and Organizational Extract, the system uses this field to send the LOINC Codes for **Recommendations**. For each recommendation, the system sends a grouped set of five OBX segments. Here are the LOINC Codes that the system sends out in OBX-3 for Recommendations. The LOINC itself is sent in OBX-3 in order to identify what the value in OBX-5 represents.

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

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

OBX|11|CE|30979-9^Vaccines Due Next^LN^^^|3|45^HepB^CVX^90731^HepB^CPT||||||F|
OBX|12|TS|30979-9&30980-7^Date Vaccine Due^LN^^^|3|20050103||||||F|
OBX|13|NM|30979-9&30973-2^Vaccine due next dose number^LN^^^|3|1||||||F|
OBX|14|TS|30979-9&30981-5^Earliest date to give^LN^^^|3|20050103||||||F|

OBX|15|CE|30979-9&30982-3^Reason applied by forecast logic to project this vaccine^LN^^^|3|^ACIP schedule||||||F|

Please see the end of the OBX field notes for a complete example of how NYSIIS sends Recommendations.

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

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

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

OBX-5 Text reporting Contraindication, Precaution, or Immunity (NIP004), Reaction (NYS001), or Event Consequence (NIP005). NYSIIS has imposed a CE data type upon this field. The first component of which is required. (e.g., |`PERTCONT^Pertussis contra^NYSIIS^^^|`)

For Batch HL7 NYSIIS-Provider, Batch HL7 Bi-directional, Real-time HL7, and Organizational Extract, this field holds the value observed for series information and recommendations. The value corresponds to the LOINC in OBX-3. For example, for recommendations, the fourth OBX segment is for the Earliest date. OBX-3 contains the code 30979-9&30981-5 and OBX-5 contains the actual earliest date as follows:

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

Please see the end of the OBX field notes for complete examples of how NYSIIS sends Series for combination vaccines and Recommendations.

OBX-11 Required for HL7. Use “F” for NYSIIS.
OBX-14 Records the time of the observation. NYSIIS ignores any time component.

NOTE 1: The only valid OBX Observation Identifier (OBX-03) for an **ADT^A31** message type is Contraindication/Precaution (30945-0).
NOTE 2: All OBX messages with an observation identifier of Vaccination Contraindication/Precaution will be returned in an outgoing file in a separate ADT message for the patient.

NOTE 3: Complete Example of NYSIIS’s use of OBX to send Series Information for Combination Vaccines

A single dose of combination vaccine may have a different series dose count for each component. For Batch HL7 NYSIIS-Provider, Batch HL7 Bi-directional, Real-time HL7, and Organizational Extract, the system sends a grouped set of two OBX segments for each component in a combination vaccine. For example, a single dose of Dtap-Hib is sent as below. The first and second OBX segments express the dose count of 1 for DTaP. The third and fourth OBX segments express the dose count of 3 for Hib.

RXA|0|999|19810807|19810807|50^DtaP-Hib^CVX^90721^DtaP-Hib^CPT|1.0|||01^^^^^~32851914^NYSIIS immunization id^IMM_ID^^^||||||||||
OBX|1|CE|38890-0^COMPONENT VACCINE TYPE^LN|1|20^DTaP^CVX^90700^DTaP^CPT||||||F|
OBX|2|NM|38890-0&30973-2^Dose number in series^LN|1|1||||||F|
OBX|3|CE|38890-0^COMPONENT VACCINE TYPE^LN|2|17^Hib^CVX^90737^Hib^CPT||||||F|
OBX|4|NM|38890-0&30973-2^Dose number in series^LN|2|3||||||F|

NOTE 4: Complete Example of NYSIIS’s use of OBX to send Recommendation Information

For Batch HL7 NYSIIS-Provider, Batch HL7 Bi-directional, Real-time HL7, and Organizational Extract, a single recommendation is sent in a grouped set of five OBX-segments, which follow a place-holder RXA segment that does not represent any actual immunization administered to the patient. The five OBX segments in order express the Vaccine of the

recommendation, the recommended date, the dose of the next vaccine due, the earliest date to give, and the reason for the recommendation, which is always the ACIP schedule.

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

The ability to send Recommendations in these grouped OBX segments only applies to HL7 Version 2.4. It applies to Batch HL7 NYSIIS-Provider, Batch HL7 Bi-directional, Real-time HL7, and Organizational Extract. Some configuration is needed to send Recommendations in this way. On the Manage Data Exchange Screen, the **Send HL7 Series/Recommend** option displays, and the user must select either “Recommendations Only” or “Both” from the pick list. (This option is hidden if Flat File or HL7 Provider-NYSIIS is chosen.)

The Send Series/Recommend option also displays on the Organization Extract Screen when the user chooses the HL7 2.4 Transaction Format.

If the user configures the system so that it will **not** send recommendations, then the system will omit sending the grouped set of five OBX segments entirely.

Batch Files of HL7 Messages

The definitions above tell how to create messages containing patient and immunization data. Each message can logically stand on its own and HL7 is compatible with various methods of online and batch transmission. NYSIIS 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)
```

<u>FHS</u>

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. NYSIIS 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. NYSIIS 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. NYSIIS 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 NYSIIS 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 can be included for convenience, has no effect on processing.

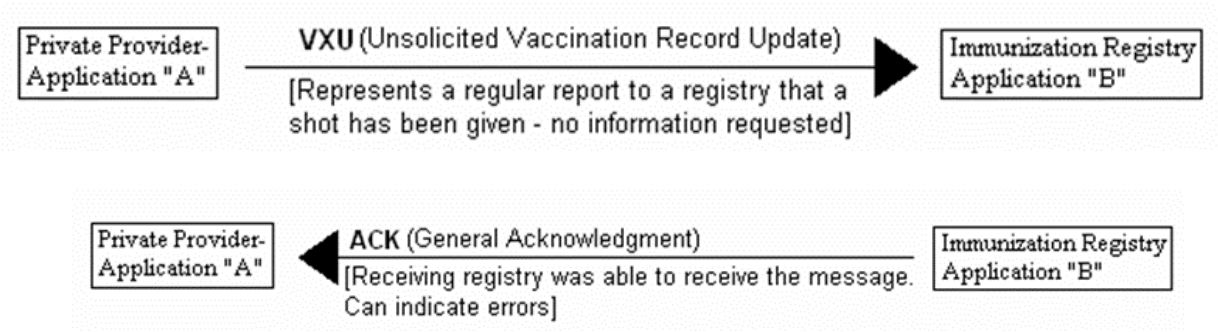
Interchange between NYSIIS and Outside Systems using the Batch user interface

The central repository of NYSIIS contains records of patients from around the state. Patient and immunization records flow both ways between NYSIIS and outside systems. Data, for a particular client, is transmitted by NYSIIS to an outside system (Provider Organization) only if the patient is identified as having an Active relationship with that Organization AND the relationship was created by transmitting the patient's record to NYSIIS or by creating the relationship via the NYSIIS-Web interface. So, an exchange of information about a given patient is always initiated by the outside system. There are three options for exchanging data with NYSIIS:

(1) The Provider Organization can send data to NYSIIS and request that no data is returned from NYSIIS, which is a Provider Organization to NYSIIS data transfer.
(2) The Provider Organization can request data from NYSIIS while not providing data to NYSIIS, which is a NYSIIS to Provider Organization data transfer.
(3) The Provider Organization can send data to NYSIIS and NYSIIS will return any updated information regarding any patients that have an Active relationship with that Provider Organization, which is a Bi-directional data transfer.

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 NYSIIS patient and immunization data, the principal response of the responder is to process the message and post whatever it contains to its own database. For these cases, the responder provides the ACK message type in an HL7 format, which contains no new application data, but allows the receiver to inform the initiator that the message has been received and processed successfully. If an error prevents successful processing, optional parts of the ACK message will allow this to be communicated as well.

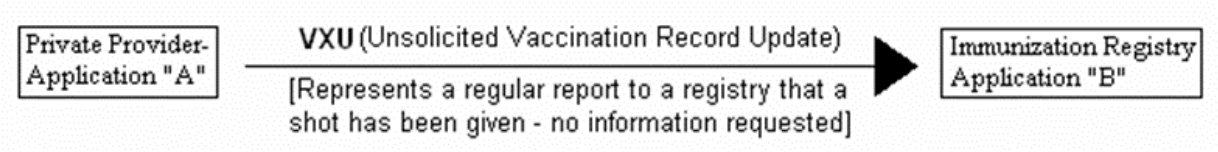
For exchanges between NYSIIS and outside systems, which is a Provider Organization to NYSIIS data transfer, it is the responsibility of the outside system to initiate the transfer of the first file, containing ADT(only for updating demographic information) and/or VXU messages with patient and immunization data for adding or updating patient and immunization data. After processing those messages, NYSIIS responds with a response file of ACK messages.

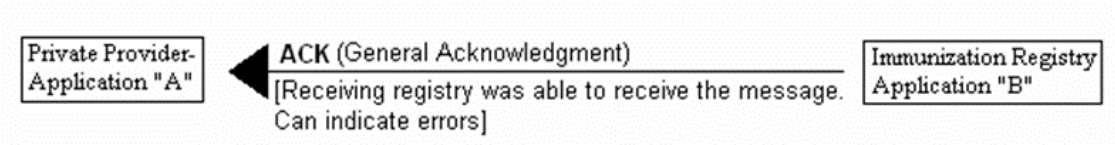


	Provider Organization	NYSIIS	
		Outgoing	**Receiving**
1.	Creates a file of patient and immunization records that are new or have changed since they were last transmitted to NYSIIS.		
2.	Transmits the file to NYSIIS through the user interface.		
3.			Processes the file received, creates a file of ACK messages.
4.		Posts the ACK file for the initiator to pick up via the web-interface of the original file submitted.	
5.	Processes the ACK file to confirm success of the file transmission.		

For exchanges between NYSIIS and outside systems, which is a Bi-directional data transfer, it is the responsibility of the outside system to initiate the transfer of the first file, containing ADT(only for updating demographic information) and/or VXU messages with patient and immunization date for adding or updating patient and immunization data. After processing those messages, NYSIIS responds with a response file of ACK messages. At the same time or soon after, NYSIIS also creates another file of ADT and VXU messages, containing the full patient record(if the patient was new), to send to the Provider

Organization that initiated the first transfer. It is the responsibility of the Provider Organization as receiver to transmit back a file of ACK messages.





	Provider Organization	NYSIIS	
		Outgoing	**Receiving**
1.	Creates a file of patient and immunization records that are new or have changed since they were last transmitted to NYSIIS.		
2.	Transmits the file to NYSIIS through the user interface.		
3.			Processes the file received, creates a file of ACK messages.
4.			Creates a file of any active patient and immunization records that have changed since they were last transmitted to this Provider Organization.
5.		Posts the ACK file for the initiator to pick up via the web-interface of the original file submitted.	
6.		Posts the file of patient and immunization records that have changed since they were last transmitted to this Provider Organization to pick up via the web-interface.	
7.	Processes the ACK file to confirm success of the file transmission.		
8.	Processes the file of patient and immunization records that have changed since they were last transmitted to this Provider Organization.		

The 15th field, in the MSH message header segment, allows the initiator to ask that the message be acknowledged only in the case of an error and NYSIIS supports this in order 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). 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 will only contain file batch headers and footers, with no actual ACK messages. For Step 2, in the above table, it is permissible for a Provider Organization to send a file containing only file batch headers and footers as a way of triggering the file that NYSIIS creates in Step 6. It is also possible that the file, NYSIIS creates in Step 6, will contain only file batch headers and footers if there are no records to send.

Examples

To illustrate how a NYSIIS HL7 file is put together we will document how the fictional organization, Valley Clinic (sending organization ID 036), formats patient and immunization records to be transmitted to NYSIIS. The following table displays the information to be transmitted and it is 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	HL7 Format
• Patient #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 ALBANY, NY 53000, 1843	PID-11
• Birth Place	WI025, WI	PID-23
• Multiple Birth Indicator	Y (patient 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 (patient records are visible by other provider organizations- only applicable to over 19. Patients under 19 are always allowed to be visible to other provider)	PD1-12
• Patient Registry Status	A (client is active in the registry)	PD1-14
• Responsible Person (parent or other person who cares for patient)		NK1 segment
• Name	MARTHA MILLER	NK1-2
• Relationship to patient	MTH	NK1-3
• Address	123 MAIN ST ALBANY, NY 53000, 1843	NK1-4
• Phone	608 123 4567	NK1-5
• Responsible Person		NK1 segment
• Name	GEORGE MILLER	NK1-2
• Relationship to patient	FTH	NK1-3
• Immunization		RXA segment
• Date administered	June 21,1998	RXA-3
• Vaccine	MMR	RXA-5
• CPT Code	90707	RXA-5
• Dose size	0.5	RXA-6
• Administering Organization	West Pediatric	RXA-11
• Historic (not owned) Immunization	01	RXA-9
• Patient #2		PID segment
• 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
• Patient Class	R	PV1-2
• Financial Class	V04	PV1-20
• Immunization		RXA segment
• Date administered	July 23, 1999	RXA-3
• Vaccine	DtaP	RXA-5
• CPT Code	90700	RXA-5
• Dose size	0.5	RXA-6
• Historic Immunization	01	RXA-9
• Administering Organization	East Clinic	RXA-11
• Immunization		RXA segment
• Date administered	July 23,1999	RXA-3

Information to transmit	Data value to be entered	HL7 Format
• Vaccine	MMR	RXA-5
• CPT Code	90707	RXA-5
• Dose size	0.5	RXA-6
• Ownership of Immunization	00	RXA-9
• Administering Provider	Dr John J Smith MD	RXA-10
• Administering Organization	Valley Clinic	RXA-11
• Lot number	BC19487	RXA-15
• Lot Manufacturer	AB (this manufacturer is Abbott - the code is found in the valid list in HL7 Table 0227.)	RXA-17
• Patient #3		PID segment
• 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
• Patient Class	R	PV1-2
• Financial Class	V04	PV1-20
• Date administered	July 29, 1999	RXA-3
• Vaccine	MMR	RXA-5
• CPT Code	90707	RXA-5
• Dose	0.5	RXA-6
• Ownership of Immunization	00	RXA-9
• Administering Provider	Dr John J Smith MD	RXA-10
• Administering Organization	Valley Clinic	RXA-11
• Lot number	AD18227	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. The message will still be accepted in NYSIIS, with the manufacturer set to unknown.)	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|^~\&||VALLEY CLINIC^036||NYSIIS|19990802091523||filename1.hl7|WEEKLY HL7
      UPLOAD|00009972<CR>
BHS|^~\&||VALLEY CLINIC^036||NYSIIS|19990802091523||||00010223<CR>
MSH|^~\&||VALLEY CLINIC^036||NYSIIS|19990802091524||ADT^A31|00000123|P|2.4|||AL<CR>
PID|||45LR999^^^^PI||MILLER^GEORGE^M^JR|OLSON^MARTHA|19950227|M|||123 MAIN
      ST^^ALBANY^NY^53000^US^^^FULTON|||||||000111222||||US^WI^1843|Y|2<CR>
PD1 ||||||||||02^REMINDER/RECALL – ANY MENTOD^HL70215|Y| |A<CR>
NK1|1|MILLER^MARTHA|MTH^Mother^HL70063|123 MAIN ST^^ALBANY^NY^53000^US^^^1843
      |(608)123-4567<CR>
NK1|2|MILLER^GEORGE|FTH^Father^HL70063<CR>
RXA|0|999|19990723|19990621|^^^90707^MMR^CPT|0.5|||01||WEST PEDIATRIC<CR>
MSH|^~\&||VALLEY CLINIC^036||NYSIIS|19990802091524||VXU^04|00000124|P|2.4|||ER<CR>
PID|||66782^^^SR^~23LK729^^^^PI|CALIFANO^MARIA|DISTEFANO^ANGELICA|19980413|F<CR>
PV1||R||||||||||||||||V04^19990723|<CR>
RXA|0|999|19990723|19990723|^^^90700^DTaP^CPT|0.5|||01|VALLEY CLINIC|EAST CLINIC<CR>
RXA|0|999|19990723|19990723|^^^90707^MMR^CPT|0.5VALLEY
      CLINIC|||00|^SMITH^JOHN^J^MD^^^^^^^OEI |Valley Clinic ||||BC18227|
      |AB^ABBOTT^HL70227<CR>
MSH|^~\&||VALLEY CLINIC^036||NYSIIS|19990802091526||VXU^04|00000125|P|2.4|||ER<CR>
PID|||927389^^^^SR^~92HG9257^^^^PI|FISHER^JOSEPH|LASOWSKI^MARY|19980528|M<CR>
```

```
PV1||R||||||||||||||||V04^19990729|<CR>
RXA|0|999|19990729|19990729|^^^90707^MMR^CPT|0.5VALLEY
      CLINIC|||00|^SMITH^JOHN^J^MD^^^^^^^OEI |Valley Clinic||||AD19487|
      19991212|ZZ^FLYBYNIGHT LABORATORIES^HL70227|||||A<CR>
BTS|3<CR>
FTS|1<CR>
```

Note: When a patient is being introduced to NYSIIS, the VXU message must precede the ADT message, since NYSIIS must have at least one immunization for a patient before being added to the database. Sending ADT and VXU messages for the same patient is redundant, since the VXU message is capable of reporting all information that is also found in the ADT.
In the example above, Valley Clinic sends a file of three HL7 messages to NYSIIS. Batch header/footer segments bracket the messages. The first message type is an ADT, which is used to send patient demographic data without including immunization information. This message type MUST follow a VXU message for the patient if the patient is new to the NYSIIS system. NYS recommends that VXU's be used for updating both demographic and immunization information.

Patient George M Miller Jr. is identified by Valley Clinic's Patient ID, 45LR999, in his PID segment. The message could have included George's NYSIIS ID number in field PID-3, but does not have to, if it is not recorded in Valley Clinic's system. George's mother's maiden name, birth date, sex, and address also serve to identify him. Some other optional fields are not present, including some fields from the full HL7 standard not defined in this document because they are not used by NYSIIS. 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 NYSIIS patient ID in field PID-3. This must have been transmitted earlier from NYSIIS to Valley Clinic's system. In this case it is legitimate to omit more of the optional PID fields, since NYSIIS must have at least the minimum required information for these patients even to create a record. However, if there is a possibility that Valley Clinic has new or changed information to send to NYSIIS, these fields should be present, and it does no harm to repeat fields even if they have been transmitted previously.

```
FHS|^~\&|NYSIIS|NYSIIS||VALLEY
      CLINIC|19990803200106||filename2.hl7||000023479|00009972<CR>
BHS|^~\&|NYSIIS|NYSIIS||VALLEY CLINIC|19990803200116||||00004321|00010223<CR>
MSH|^~\&|NYSIIS|NYSIIS||VALLEY CLINIC|19990803200117||ACK|00000456|P|2.4<CR>
MSA|AA|00000123<CR>
MSH|^~\&|NYSIIS|NYSIIS||VALLEY CLINIC|19990803200119||ACK|00000458|P|2.4<CR>
MSA|AE|00000125|INVALID MANUFACTURER CODE<CR>
ERR|RXA^152^17^1<CR>
BTS|2|<CR>
FTS|1<CR>
```

NYSIIS answers the file from the above example with a file of ACK messages. Valley Clinic's message 00000123 (this is the record code entered in MSH-10 and used to identify the individual record) had the value AL in field MSH-15, asking for acknowledgements of all messages. The value AA in MSA-1 indicates 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 NYSIIS 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, then the answering file from NYSIIS would contain just the FSH, BHS, BTS, and FTS segments. All the 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 NYSIIS responded with ACK segments. The format is identical when NYSIIS 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. NYSIIS always sends its own patient identifier in the required field PID-03 and includes the outside system's identifier in PID-03 if known. Outside systems are encouraged to store NYSIIS's patient ID, and use it in PID-03 when sending to NYSIIS. This provides a firm basis for patient identification makes processing easier for the NYSIIS system and avoids errors in storing patient information, such as creation of duplicate records when an insufficiently identified patient record cannot be matched with a record already in the NYSIIS database. Though NYSIIS makes a great effort to match patient records effectively, use of the NYSIIS patient ID is the best guarantee of clean and useful data.

Appendix A -- HL7 Data Types

The following descriptions of HL7 data types are excerpted or adapted from the HL7 standard. See the field notes within each segment definition above on how to use data types in particular fields. Some data types have complex definitions much of which do not apply to NYSIIS 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 *PV1-3-assigned patient location*. The final eight components replace the ninth component of *PV1-3-assigned patient location* and represent the full address specification.

CX

Extended Composite ID with Check Digit

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

HD

Hierarchic Designator

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

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 8824-1987(E).

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

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

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

```
|19760704010159-0600|   1:01:59 on July 4, 1976 in the Eastern
                      Standard Time zone.

|19760704010159-0500|   1:01:59 on July 4, 1976 in the Eastern
                      Daylight Saving Time zone.

|198807050000|          Midnight of the night extending from July 4 to
                      July 5, 1988 in the local time zone of the sender.

|19880705|              Same as prior example, but precision extends
                      only to the day.  Could be used for a
                      birthdate, if the time of birth is unknown.
```

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

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

<u>XAD</u>

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^^|
```

<u>Street address (ST)</u>

The street or mailing address of a person or institution.

<u>Other designation (ST)</u>

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

<u>City (ST)</u>
<u>State or province (ST)</u>

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

<u>Zip or postal code (ST)</u>

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.

<u>Country (ID)</u>

Defines the country of the address. See Table 0212.

<u>Address type (ID)</u>

Address type is optional.

<u>Other geographic designation (ST)</u>

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

County code (IS)

A code that represents the county in which the specified address resides. Refer to *user-defined table 0289 - County*. When this component is used to represent the county, 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 track in which the specified address resides. NYSIIS does not store this value.

XCN

Extended Composite ID Number and Name for Persons

NYSIIS 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. NYSIIS ignores this component.

XTN

Extended Telecommunication Number

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

Example:

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

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

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

Telecommunication use code (ID)

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

Table 0201 - Telecommunication use code

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

Telecommunication equipment type (ID)

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

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

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

Appendix B -- HL7 Tables

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

Type	Table	Name	Value	Description
HL7	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
HL7	0004	Patient class		
	0004		E	Emergency
	0004		I	Inpatient
	0004		O	Outpatient
	0004		P	Preadmit
	0004		R	Recurring
	0004		B	Obstetrics
HL7	0005	Race		
	0005		1002-5	American Indian or Alaska Native
	0005		2028-9	Asian
	0005		2076-8	Native Hawaiian or Other Pacific Islander
	0005		2054-5	Black or African-American
	0005		2106-3	White
	0005		2135-2	Hispanic or Latino
	0005		2186-5	Not Hispanic or Latino
	0005		2131-1	Other Race
	0005		Null	Unknown
HL7	0008	Acknowledgment Code		
	0008		AA	Application Accept
	0008		AE	Application Error
	0008		AR	Application Reject
User	0063	Relationship		
	0063		ASC	Associate
	0063		BRO	Brother
	0063		CGV	Care giver
	0063		CHD	Child
	0063		DEP	Handicapped dependent
	0063		DOM	Life partner
	0063		EMC	Emergency contact
	0063		EME	Employee
	0063		EMR	Employer
	0063		EXF	Extended family
	0063		FCH	Foster Child
	0063		FND	Friend
	0063		FTH	Father
	0063		GCH	Grandchild
	0063		GRD	Guardian
	0063		GRP	Grandparent
	0063		MGR	Manager
	0063		MTH	Mother
	0063		NCH	Natural child
	0063		NON	None
	0063		OAD	Other adult
	0063		OTH	Other
	0063		OWN	Owner
	0063		PAR	Parent
	0063		SCH	Stepchild

Type	Table	Name	Value	Description
	0063		SEL	Self
	0063		SIB	Sibling
	0063		SIS	Sister
	0063		SPO	Spouse
	0063		TRA	Trainer
	0063		UNK	Unknown
	0063		WRD	Ward of court
HL7	0064	Financial class (VFC Eligibility)		
	0064	V00	VFC Eligibility Unknown	VFC eligibility not determined/unknown
	0064	V01	Not VFC Eligible	Not VFC Eligible
	0064	V02	Medicaid/Medicare Managed Care	VFC Eligible – Medicaid/Medicare Managed Care
	0064	V03	Uninsured	VFC eligible – Uninsured
	0064	V04	American Indian/Alaskan Native	VFC eligible – American Indian/Alaskan Native
	0064	V05	Underinsured	VFC Eligible – Underinsured
	0064	CH00	Child Health Plus B	S-Chip Coverage Not VFC eligible.
HL7	0076	Message Type		
	0076		ACK	General acknowledgment message
	0076		ADR	ADT response
	0076		ADT	ADT message
	0076		QCK	Query general acknowledgment
	0076		VXQ	Query for vaccination record
	0076		VXX	Vaccination query response with multiple PID matches
	0076		VXR	Vaccination query record response
	0076		VXU	Unsolicited vaccination record update
	0076		ORU	Unsolicited observation results
HL7	0085	Observation result status codes		
	0085		O	Order detail description only
HL7	0103	Processing ID		
	0103		P	Production
HL7	0104	Version ID		
	0104		2.3.1	Release 2.3.1 1999
	0104		2.4	Release 2.4 2000
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 Gluteus Medius
	0163		LVL	Left Vastus Lateralis
	0163		LLFA	Left Lower Forearm

Type	Table	Name	Value	Description
	0163		RA	Right Arm
	0163		RT	Right Thigh
	0163		RVL	Right Vastus Lateralis
	0163		RG	Right Gluteus Medius
	0163		RD	Right Deltoid
	0163		RLFA	Right Lower Forearm
HL7	0189	Ethnic Group		
	0189		2135-2	Hispanic
	0189		2186-5	Non-Hispanic
	0189		Null	Unknown
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
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	0227	Manufacturers of vaccines (code = MVX)		
	0227		AB	Abbott
	0227		AD	Adams
	0227		ALP	Alpha
	0227		AR	Armour (**Inactive** – use ZLB)
	0227		AVB	Aventis Behring (Inactive use ZLB)
	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		CEN	Centeon L.L.C. (**Inactive** – use ZLB)
	0227		CHI	Chiron Corporation (bought by Novartis on 4/20/2006)
	0227		CMP	Celltech Medeva Pahm (**Inactive** – use NOV)
	0227		CNJ	Cangene Corporation
	0227		CON	Connaught **(Inactive** – use PMC)
	0227		CSL	CSL Biotherapies
	0227		DYN	DynPort Vaccine Company, LLC
	0227		EVN	Evans (**Inactive** – use NOV)
	0227		GRE	Greer
	0227		IAG	Immuno International AG (**Inactive** – use BAH)
	0227		IM	Merieux (**Inactive** – Use PMC)
	0227		IUS	Immuno-US
	0227		JPN	The Research foundation for Microbial Diseases of Osaka U.
	0227		KGC	Korea Green Cross

Type	Table	Name	Value	Description
	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	BioPort
	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		PD	Parkdale Pharmaceuticals (formerly Parke Davis)
	0227		PFR	Pfizer (formerly Wyeth Pharmaceuticals)
	0227		PMC	Sanofi Pasteur Inc. (Connaught and Pasteur Merieux)
	0227		PRX	Praxis Biologics (**Inactive** – use WAL)
	0227		PWJ	Powderject Pharmaceutical
	0227		SCL	Sclavo
	0227		SOL	Solvay Pharmaceuticals
	0227		SKB	GlaxoSmithKline
	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		VXG	VaxGen
	0227		WA	Wyeth-Ayerst (**Inactive** – use WAL)
	0227		WAL	Wyeth-Ayerst
	0227		ZLB	ZLB Behring (includes Aventis Behring and Armour Pharmaceutical Co)
	0227		OTH	Other
	0227		UNK	Unknown manufacturer
User	0289	County (New York only)		
	0289		NY001	Albany
	0289		NY003	Allegany
	0289		NY005	Bronx
	0289		NY007	Broome
	0289		NY009	Cattaraugus
	0289		NY011	Cayuga
	0289		NY013	Chautauqua
	0289		NY015	Chemung
	0289		NY017	Chenango
	0289		NY019	Clinton
	0289		NY021	Columbia
	0289		NY023	Cortland
	0289		NY025	Delaware
	0289		NY027	Dutchess
	0289		NY029	Erie
	0289		NY031	Essex
	0289		NY033	Franklin
	0289		NY035	Fulton
	0289		NY037	Genesee
	0289		NY039	Greene
	0289		NY041	Hamilton
	0289		NY043	Herkimer

Type	Table	Name	Value	Description
	0289		NY045	Jefferson
	0289		NY047	Kings
	0289		NY049	Lewis
	0289		NY051	Livingston
	0289		NY053	Madison
	0289		NY055	Monroe
	0289		NY057	Montgomery
	0289		NY059	Nassau
	0289		NY061	New York
	0289		NY063	Niagara
	0289		NY065	Oneida
	0289		NY067	Onondaga
	0289		NY069	Ontario
	0289		NY071	Orange
	0289		NY073	Orleans
	0289		NY075	Oswego
	0289		NY077	Otsego
	0289		NY079	Putnam
	0289		NY081	Queens
	0289		NY083	Rensselaer
	0289		NY085	Richmond
	0289		NY087	Rockland
	0289		NY091	Saratoga
	0289		NY093	Schenectady
	0289		NY095	Schoharie
	0289		NY097	Schuyler
	0289		NY099	Seneca
	0289		NY089	St. Lawrence
	0289		NY101	Steuben
	0289		NY103	Suffolk
	0289		NY105	Sullivan
	0289		NY107	Tioga
	0289		NY109	Tompkins
	0289		NY111	Ulster
	0289		NY113	Warren
	0289		NY115	Washington
	0289		NY117	Wayne
	0289		NY119	Westchester
	0289		NY121	Wyoming
	0289		NY123	Yates
NIP	NIP001	Immunization Information Source		
	NIP001		00	New Immunization Administered (by Sending Organization)
	NIP001		01	Source Unspecified
	NIP001		02	Other Provider
	NIP001		03	Parent Written Record
	NIP001		04	Parent Recall
	NIP001		05	Other Registry
	NIP001		06	Birth Certificate
	NIP001		07	School Record
	NIP001		08	Public Agency
NIP	NIP002	Substance Refusal Reason		
	NIP002		00	Parental Refusal
	NIP002		01	Religious Exemption
NIP	NIP004	Contraindications, Precautions		

Type	Table	Name	Value	Description
	NIP004		03	Allergy to baker's yeast (anaphylactic)
	NIP004		04	Allergy to egg ingestion (anaphylactic)
	NIP004		05	Allergy to gelatin (anaphylactic)
	NIP004		06	Allergy to neomycin (anaphylactic)
	NIP004		07	Allergy to streptomycin (anaphylactic)
	NIP004		08	Allergy to thimerosal (anaphylactic)
	NIP004		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 dose 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
	NIP004		19	HIV infection (in household contact)
	NIP004		20	HIV infection (in recipient)
	NIP004		21	Current acute illness, moderate to severe (with or without fever) (e.g. diarrhea, otitis media, vomiting)
	NIP004		22	Chronic illness (e.g. chronic gastrointestinal disease)
	NIP004		23	Immune globulin (IG) administration, recent or simultaneous
	NIP004		24	Immunity: diphtheria
	NIP004		25	Immunity: Haemophilus influenzae type B (Hib)
	NIP004		HEPA_I	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		31	Immunity: rubella
	NIP004		32	Immunity: tetanus
	NIP004		33	Immunity: varicella (chicken pox)
	NIP004		33A	History of Varicella
	NIP004		34	Immunodeficiency (family history)
	NIP004		35	Immunodeficiency (household contact)
	NIP004		36	Immunodeficiency (hematologic and solid tumors, congenital immunodeficiency, lon-term immunosuppressive therapy, including steroids) (in recipient)
	NIP004		37	Neurologic disorders, underlying (including seizure disorders, cerebral palsy, and developmental delay)
	NIP004		38	Otitis media (ear infection) moderate to severe (with or without fever)

Type	Table	Name	Value	Description
	NIP004		39	Pregnancy (in recipient)
	NIP004		40	Thrombocytopenia
	NIP004		41	Thrombocytopenic purpura (history)
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 – deceased
	NIP006		M	Moved or Gone Elsewhere
NYSIIS	NYS001	Reaction Codes		
	NYS001		PERTCONT	Pertussis allergic reaction
	NYS001		TETCONT	Tetanus allergic reaction
	NYS001		HYPOTON	Hypotonic-hyporesponsive collapse within 48 hours of immunization
	NYS001		SEIZURE	Seizure occurring within 3 days
	NYS001		CRYING	Persistent crying lasting >= 3 hours within 48 hours of immunization
	NYS001		FEVER105	Temperature >= 105 (40.5 C) within 48 hours of immunization
NYSIIS	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		Flu H1N1-09	Novel Influenza-09
	WVGC		HepA	Hepatitis A
	WVGC		HepB	Hepatitis B
	WVGC		Hib	Hib
	WVGC		HPV	Human Papilloma Virus
	WVGC		Ig	Ig
	WVGC		IG-RSV IgIM	IG-RSV IgIM
	WVGC		Influenza	Influenza
	WVGC		Lyme	Lyme
	WVGC		Measles	Measles Virus Vaccine
	WVGC		MMR	Measles, Mumps, Rubella
	WVGC		Meningo	Meningitis
	WVGC		Mumps	Mumps Virus Vaccine
	WVGC		Pertussis	Pertussis
	WVGC		Plague	Plague
	WVGC		Pneumococcal	Pneumonia Conjugate
	WVGC		Pneumo-Poly	Pneumonia Polysaccharide
	WVGC		Polio	Poliomyelitis
	WVGC		Rabies	Rabies
	WVGC		Rotavirus	Rotavirus
	WVGC		Rubella	Rubella Virus Vaccine
	WVGC		Tetanus	Tetanus
	WVGC		Td	Tetanus Diphtheria

Type	Table	Name	Value	Description
	WVGC		Typhoid	Typhoid
	WVGC		Smallpox	Vaccinia
	WVGC		Varicella	Varicella
	WVGC		Yellow Fever	Yellow Fever
	WVGC		Zoster	Zoster
NYSIIS	WVTN	Vaccine Trade Name (WVTN)		
	WVTN		Acel-Imune	DTaP
	WVTN		ActHib	Hib-PRP-T
	WVTN		Adacel	TdaP > 7 years
	WVTN		Adeno T4	Adeno T4
	WVTN		Adeno T7	Adeno T7
	WVTN		AFLURIA	Influenza
	WVTN		AFLURIA Pres-Free	Preservative-Free Influenza
	WVTN		Anthrax	Anthrax
	WVTN		Attenuvax	Measles
	WVTN		BabyBIG	Botulism
	WVTN		BayTet	TIg
	WVTN		BCG-Cancer	BCG-BC
	WVTN		BCG-TB	BCG-TB
	WVTN		Biavax II	Rubella-Mumps
	WVTN		BIG	Botulism
	WVTN		Boostrix	TdaP > 7 years
	WVTN		Botulinum-antitoxin	Botulinum-antitoxin
	WVTN		Botulism	Botulism
	WVTN		Certiva	DTaP
	WVTN		Cholera-I	Cholera-Inject
	WVTN		Cholera-O	Cholera-Oral
	WVTN		CMV-IgIV	CMV-IgIV
	WVTN		Comvax	HepB-Hib
	WVTN		DAPTACEL	DTaP,5 pertussis antigens
	WVTN		DECAVAC	Td Adult Pres-Free
	WVTN		Diphtheria	Diphtheria
	WVTN		Diphtheria-antitoxin	Diphtheria-antitoxin
	WVTN		Dryvax	Smallpox
	WVTN		DT	DT-Peds
	WVTN		DTP	DTP
	WVTN		Engerix-B Adult	HepB-Adult
	WVTN		Engerix-B dialysis	HepB-Dialysis 4 dose
	WVTN		Engerix-B Peds	HepB-Peds
	WVTN		Flebogamma	IgIV
	WVTN		Flu-Deleted	FLU, NOS
	WVTN		Flu-Imune	Influenza
	WVTN		Flu-Mist	FLU-Nasal
	WVTN		Flu-Shield	Influenza
	WVTN		Fluarix Pres-Free	Preservative-Free Influenza
	WVTN		FluLaval	Influenza
	WVTN		Fluogen	Influenza
	WVTN		Fluvirin	Influenza
	WVTN		Fluvirin Pres-Free	Preservative-Free Influenza
	WVTN		Fluzone	Influenza
	WVTN		Fluzone Pres-Free	Preservative-Free Influenza
	WVTN		Gardasil	HPV, Quadrivalent
	WVTN		Havrix-Adult	HepA-Adult

Type	Table	Name	Value	Description
	WVTN		Havrix-Peds 2 Dose	HepA-Ped 2 Dose
	WVTN		Havrix-Peds 3 Dose	HepA-Peds
	WVTN		HBIg	HBIg
	WVTN		Hiberix	HIB-PRP-D
	WVTN		Hib-TITER	Hib-HbOC
	WVTN		H1N1 Nasal	Novel Influenza-H1N1-09, nasal
	WVTN		H1N1 P-free, CSL	Novel Influenza-H1N1-09, preserve-free
	WVTN		H1N1 P-free, Novartis	Novel Influenza-H1N1-09, preserve-free
	WVTN		H1N1 P-free, Sanofi	Novel Influenza-H1N1-09, preserve-free
	WVTN		H1N1 CSL	Novel Influenza-H1N1-09
	WVTN		H1N1 Novartis	Novel Influenza-H1N1-09
	WVTN		H1N1 Sanofi Pasteur	Novel Influenza-H1N1-09
	WVTN		Ig	Ig
	WVTN		IgIV	IgIV
	WVTN		Imovax Rabies ID	Rabies-ID
	WVTN		Imovax Rabies IM	Rabies-IM
	WVTN		Infanrix	DTaP
	WVTN		IPOL	Polio-Inject
	WVTN		JE-Vax	Japanese Enceph
	WVTN		Kinrix	DTaP-IPV
	WVTN		LYMErix	Lyme
	WVTN		M-R-VAX	Measles-Rubella
	WVTN		Measles	Measles
	WVTN		Measles-Rubella (MERU)	Measles-Rubella
	WVTN		Menactra	Meningococcal conjugate vaccine
	WVTN		MENOMUNE	Meningococcal
	WVTN		Meruvax II	Rubella
	WVTN		MMR II	MMR
	WVTN		Mumps	Mumps
	WVTN		Mumps-Rubella (MURU)	Rubella-Mumps
	WVTN		Mumpsvax	Mumps
	WVTN		OmniHib	Hib-PRP-T
	WVTN		ORIMUNE	Polio-Oral
	WVTN		Pediarix	DTAP/Polio/Hep B
	WVTN		Pentacel	DtaP-Hib-IPV
	WVTN		PedvaxHIB	Hib-OMP
	WVTN		Plague	Plague
	WVTN		Pneumovax 23	Pneumococcal 23
	WVTN		PNU-IMUNE 23	Pneumococcal 23
	WVTN		Prevnar 7	Pneumo-Conjugate Vaccine, 7 valent
	WVTN		Prevnar13	Pneumo-Conjugate Vaccine, 13 valent
	WVTN		ProHIBit	Hib-PRP-D
	WVTN		ProQuad	MMRV
	WVTN		RabAvert	Rabies-IM
	WVTN		Recombivax Peds	HepB-Peds
	WVTN		Recombivax-Adult	HepB-Adult
	WVTN		Recombivax-Dialysis	HepB-Dialysis 4 dose
	WVTN		Rho(D)Full	Rho(D)Full
	WVTN		Rho(D)IV	Rho(D)IV
	WVTN		Rho(D)Mini	Rho(D)Mini
	WVTN		RIg	RIg
	WVTN		RIg-HT	RIg-HT
	WVTN		Rotarix	Rotavirus monovalent
	WVTN		RotaShield	Rotavirus tetravalent
	WVTN		RotaTeq	Rotavirus pentavalent

Type	Table	Name	Value	Description
	WVTN		RSV-IgIM	RSV-IgIM
	WVTN		RSV-IgIV	RSV-IgIV
	WVTN		Rubella	Rubella
	WVTN		Td	Td
	WVTN		Tetramune	DTP-Hib
	WVTN		TIg	TIg
	WVTN		TriHIBit	DTaP-Hib
	WVTN		Tripedia	DTaP
	WVTN		TT	Tetanus
	WVTN		Twinrix	HepA-HepB Adult
	WVTN		Typhim Vi	Typhoid-ViCPs
	WVTN		Typhoid	Typhoid-HP
	WVTN		Typhoid-AKD	Typhoid-AKD
	WVTN		Vaccinia, diluted	Vaccinia (smallpox), diluted
	WVTN		Vaccinia VIG	Vaccinia immune globulin VIG
	WVTN		VAQTA-Adult	HepA-Adult
	WVTN		VAQTA-Peds 2 Dose	HepA-Ped 2 Dose
	WVTN		VAQTA-Peds 3 Dose	HepA-Ped 3 Dose
	WVTN		Varivax	Varicella
	WVTN		Vivotif Berna/Ty21a	Typhoid-Oral
	WVTN		VZIg	VZIg
	WVTN		YF-VAX	Yellow Fever
	WVTN		Zostavax	Zoster (shingles), live

CPT Codes (CPT) 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		Adeno not otherwise specified Recorded as CVX 54	
90581	24	Anthrax	Anthrax	Anthrax	Anthrax	MIP
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 not otherwise specified	
90725	26	Cholera	Cholera-Injectable	Cholera-I	Cholera injectable	CHI
90592			Cholera-Oral	Cholera-O	Cholera Oral	CHI
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
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		DTaP not otherwise specified Recorded as CVX 20	
90696	130		DTaP-IPV	Kinrix	DTaP-IPV	SKB
90663	125	Flu H1N1-09	Novel Influenza-H1N1-09, nasal	H1N1 Nasal	2009- Influenza-H1N1, nasal	MED
	126		Novel Influenza-H1N1-09, preserve-free	H1N1 p-free, CSL H1N1 p-free, Novartis H1N1 p-free, Sanofi	2009- Influenza-H1N1, preservative free - injectable	CSL NOV PMC
	127		Novel Influenza-H1N1-09	H1N1 CSL H1N1 Novartis H1N1 Sanofi Pasteur	2009 Influenza-H1N1, injectable	CSL NOV PMC
	128		Novel Influenza-H1N1-09 all formulations		2009 Influenza-H1N1, not otherwise specified	
90632	52	HepA	HepA adult	Havrix-Adult	Hepatitis A adult	SKB
				VAQTA-Adult		MSD
90633	83		HepA ped-2 dose	Havrix-Peds 2 Dose	Hepatitis A pediatric/adolescent 2 dose	SKB
				VAQTA-Peds 2 Dose		MSD
90634	84		HepA ped-3 dose	Havrix-Peds 3 Dose	Hepatitis A pediatric/adolescent 3 dose	SKB
						MSD
				VAQTA-Peds 3 Dose		
90636	104		HepA-HepB Adult	Twinrix	Hepatitis A & Hepatitis B adult	SKB
90730	85		Hep A		Hep A not otherwise specified	
	31		Hep A-peds, NOS		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		Hep B not otherwise specified	
90740	44		Hep B-dialysis 3 dose		Hepatitis B Dialysis 3 dose	
90743	43		HepB adult	Recombivax-Adult	Hepatitis B adult dose 1ml	MSD
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
90645	47	Hib	Hib-HbOC	Hib-TITER	Hemophilus influenza b HbOC 4 dose	WAL
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

CPT	CVX	Group	Vaccine	Trade Name	Description	MFG
90648	48		Hib-PRP-T	Hiberix	Hemophilus influenza b PRP-T 4 dose	SKB
				OmniHib		PMC
				ActHib		PMC
90720	22		DTP-Hib	Tetramune	DTP – Hib combination	WAL
90721	50		DtaP-Hib	TriHIBit	DtaP-Hib combination	PMC
90737	17		Hib		Hib not otherwise specified	
90748	51		HepB-Hib	Comvax	HepB-Hib combination	MSD
90698	120		DtaP-Hib-IPV	Pentacel	DtaP-Hib-IPV combination	PMC
90650	118	HPV	HPV, bivalent	Cervarix	Human Papilloma Virus	SKB
90649	62		HPV, Quadrivalent	Gardasil	Human Papilloma Virus	MSD
	137		HPV, uncertain fromulation			
90281	86	Ig	Ig	Ig	Ig human	
90283	87		IgIV	IgIV	Ig IV human	
				Flebogamma		
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			Ig	Ig	Unlisted immune globulin	
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	
90379	71		RSV-IgIV	RSV-IgIV	Respiratory syncytial virus Ig IV	
90384			Rho(D)Full	Rho(D)Full	Rho(D)Ig Rhlg human full-dose	
90385			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	
90389	13		TiG	BayTet	Tetanus Ig human	
				TIg		
90393	79		Vaccinia immune globulin	Vaccinia VIG	Vaccinia Ig human	
90396	36		VZIg	VZIg	Varicella-zoster Ig human	
	117		VZIG (IND)	VariZIG		CNJ
			Varicella IG			
90378	93	IG-RSV IgIM	RSV-IgIM	Synagis	Respiratory syncytial virus Ig	
90655	15	Influenza	Influenza, Preservative-Free	AFLURIA Pres-Free	Influenza preservative free	CSL
				Fluarix Pres-Free		SKB
				Fluvirin Pres-Free		CHI
				Fluzone Pres-Free		PMC
90656				AFLURIA Pres-Free		CSL
				Fluarix Pres-Free		SKB
				Fluvirin Pres-Free		CHI
				Fluzone Pres-Free		PMC
90657			Influenza	AFLURIA	Influenza split virus	CSL
				Flu-Imune		WAL
				Flu-Shield		WAL
				FluLaval		SKB
				Fluogen		PD
				Fluvirin		CHI
				Fluzone		PMC
90658				AFLURIA		CSL
				Flu-Imune		WAL
				Flu-Shield		WAL
				FluLaval		SKB
				Fluogen		PD
				Fluvirin		CHI
				Fluzone		PMC
90659	16		Influenza, Whole virus		Influenza whole virus	
90660	111		Flu-nasal	Flu-Mist	Influenza live, for intranasal use	WAL
90724	88		Influenza, NOS	Flu-Unspecified	Influenza not otherwise specified	
90665	66	Lyme	Lyme	LYMErix	Lyme disease	SKB
90735	39	Encephalitis	Japanese encephalitis	JE-Vax	Japanese encephalitis	JPN
90705	05	Measles	Measles	Measles	Measles live 1964-1974 (Eli Lilly)	MSD
				Attenuvax	Measles live	MSD
90708	04		Measles-Rubella	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		Rubella and Mumps not otherwise specified	

CPT	CVX	Group	Vaccine	Trade Name	Description	MFG
	38		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	Proquad	Measles, mumps, rubella, varicella live	MSD
90733	32	Meningo	Meningococcal	MENOMUNE	Meningococcal polysaccharide	PMC
90734	114		Meningococcal polysaccharide conjugate	Menactra	Meningococcal [Groups A, C, Y and W-135] Polysaccharide Diphtheria Toxoid Conjugate Vaccine	PMC
	108		Meningococcal		Meningococcal not otherwise specified	
90715	115	Pertussis	TdaP > 7 Years	Adacel	TdaP > 7 years	PMC
				Boostrix		SKB
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
90698	120		DtaP-Hib-IPV	Pentacel	DtaP-Hib-IPV combination	PMC
	89		Polio		Polio not otherwise specified	
90696	130		DTaP-IPV	Kinrix	DTaP-IPV	SKB
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 7	Pneumococcal conjugate vaccine7 valent	WAL
	109		Pneumococcal, NOS		Pneumococcal not otherwise specified	
90670	133		Pneumo-conjugate 13	Prevnar13	Pneumococcal conjugate vaccine 13 valent	PFR
90675	18	Rabies	Rabies-intramuscular	RabAvert	Rabies intramuscular	CHI
				Imovax Rabies IM		PMC
90676	40		Rabies-intradermal	Imovax Rabies ID	Rabies intradermal	PMC
90726	90		Rabies		Rabies not otherwise specified	
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
90681	119		Rotavirus, monovalent	Rotarix	Rotavirus monovalent	SKB
	122		Rotavirus		Rotavirus not otherwise specified	
90706	06	Rubella	Rubella	Rubella	Rubella live	MSD
				Meruvax II		MSD
90708	04		Measles-Rubella	Measles-Rubella (MERU)	Measles and rubella live	MSD
				M-R-VAX		MSD
90709			Rubella-Mumps		Rubella-Mumps not otherwise specified	
	38		Rubella-Mumps	Mumps-Rubella (MURU)	Rubella and mumps live	MSD
				Biavax II		MSD
	75	Smallpox	Smallpox	Dryvax	Vaccinia(Smallpox) dry	WAL
	105		Vaccinia (Smallpox), diluted	Vaccinia, diluted	Vaccinia (smallpox), diluted	
90718	09	Td	Td	Td	Tetanus and diphtheria adult	PMC MBL
90714	113		Td Adult Pres-Free	DECAVAC	Td preservative free – CPT code is effective 7/1/2005	PMC
90715	115		TdaP > 7 Years	Adacel	TdaP > 7 years	PMC
				Boostrix		SKB
90703	35	Tetanus	Tetanus	TT	Tetanus	PMC
	112		Tetanus Toxoid		Tetanus not otherwise specified Recorded as CVX 35	
90690	25	Typhoid	Typhoid-oral	Vivotif Berna/Ty21a	Typhoid oral	
90691	101		Typhoid-ViCPs	Typhim Vi	Typhoid VI capsular polysaccharide	PMC
90692	41		Typhoid-H-P	Typhoid	Typhoid heat and phenol inactivated	
90693	53		Typhoid-AKD	Typhoid-AKD	Typhoid acetone-killed, dried (military)	
	91		Typhoid		Typhoid not otherwise specified (after 7/1/2005, no CPT code is associated with this vaccine group)	
90710	94	Varicella	MMRV	ProQuad	Measles, mumps, rubella, varicella live	MSD

CPT	CVX	Group	Vaccine	Trade Name	Description	MFG
90716	21		Varicella	Varivax	Varicella live	MSD
90717	37	Yellow Fever	Yellow Fever	YF-VAX	Yellow Fever live	PMC
90736	121	Zoster	Zoster (shingles), live	Zostavax	Zoster (shingles), live	MSD