ImmPact HL7 v2.5.1
VXU Implementation Guide

Version 0.3.4
Consistent with
HL7 Version 2.5.1 Implementation Guide for
Immunization Messaging, Release 1.5
March 2025

REVISION HISTORY

Editor	Edit Date	Version	Changes
Lacey Dean	01/12/2018	0.1	Update specific to ImmPact
ME DEX Team	06/30/2020	0.2	State specific requirements
ME DEX Team	09/24/2020	0.3	RXA-5 Trade name
ME DEX Team	07/09/2021	0.3.1	Clarify requirements
ME DEX Team	11/01/2023	0.3.2	Updates and corrections
ME DEX Team	06/11/2024	0.3.3	ORC and RXA updates
ME DEX Team	03/11/2025	0.3.4	OBX Contraindications/Immunities/Reactions

IMMPACT DATA EXCHANGE CONTACT INFORMATION

For data exchange questions and support, please email MEIIS.DEXCDC@maine.gov.

To get the latest information regarding data exchange with ImmPact, please visit the data exchange page on the ImmPact website: https://www.maine.gov/dhhs/mecdc/infectious-disease/immunization/immpact.shtml

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INTRODUCTION

Thank you for your interest in Health Level Seven (HL7) electronic data exchange with the Maine ImmPact Immunization Information System (IIS). Getting timely and accurate immunization data into ImmPact is important for your clinic and for the individuals you serve.

This document outlines the specifications for immunization data exchange between the Maine Immunization Registry and the Provider's Electronic Medical Record (EMR) application. This document is intended for use in conjunction with the Center for Disease Control (CDC) Implementation Guide for Immunization Data Transactions using Version 2.5.1 of the Health Level Seven (HL7) Standard Protocol, HL7 Version 2.5.1: Implementation Guide for Immunization Messaging, Release1.5:
https://repository.immregistries.org/files/resources/5bef530428317/hl7_2_5_1_release_1_5 ___2018_update.pdf

INTENDED AUDIENCE

The Data Exchange Specification is intended for technical groups from Immunization Information Systems (IIS) and Electronic Health Records (EHR) that must implement these guidelines. The reader of the Data Exchange Specification should have a solid HL7 foundations and be very familiar with the contents of the CDC Immunization Information System Functional Standards (IIS FS https://www.cdc.gov/vaccines/programs/iis/functional- standards/func-stds-2018-2022.html) The goal of the Data Exchange Specification is to provide an unambiguous specification for creating and interpreting messages.

HL7 MESSAGE SPECIFICATION

All exchanges of immunization data between EMR applications and ImmPact will use the HL7 standard protocol. HL7 is a not-for-profit organization composed of a broad range of health care professionals. HL7 develops specifications; the most widely used being a messaging standard for communication between various healthcare applications. The remainder of this document will use the term HL7 to refer to the messaging standard protocol instead of the organization.

HL7 information can be accessed through the following website link: http://www.hl7.org/

CDC HL7 Message Implementation Profile

The Centers for Disease Control and Prevention (CDC) National Immunization Program (NIP) publishes an implementation guide for immunization data messaging. The title of the guide is "HL7 Version 2.5.1: Implementation Guide for Immunization Messaging, Release 1.5" Published 10/1/2014. The intent of the guide is to describe a set of HL7 immunization message definitions and encoding rules and provide a nationally consistent implementation of those messages. The current document published by the CDC can be found at https://www.cdc.gov/iis/technical-guidance/hl7.html?CDC_AAref_Val=https://www.cdc.gov/vaccines/programs/iis/technical-guidance/hl7.html

The guide identifies the set of HL7 messages required to enable information systems that maintain immunization records to transmit patient-specific immunization histories electronically to other systems. This allows healthcare providers to have access to these records at the time health care is provided. This includes:

- Sending and receiving immunization histories for individuals
- Sending and receiving demographic information about individuals
- Requesting immunization histories for individuals
- Responding to requests for immunization histories by returning immunization histories
- Acknowledging receipt of immunization histories and requests for immunization histories
- Reporting errors in the messaging process
- Sending observations about an immunization event (this may include funding, reactions, forecasts and evaluations)

The HL7 message profile specification implemented between ImmPact and the provider's EMR application is based on the CDC specification and consists of a sub-set of the message and segment definitions contained in the guide.

Message Workflow

The provider's EMR or EHR will be the system of origin for immunization data. The user will log into the EMR application and enter patient, responsible person and immunization data into the appropriate data fields of the application. The data entered and maintained will reflect the data identified in this document.

The act of changing, adding, deleting patient, next of kin or immunization data will trigger the creation of an HL7 message. This can take place in real time, or the records can be batched for later message creation.

BI-DIRECTIONAL CAPABILITY – QBP/RSP

IMMPACT supports real-time immunization record query messages (QBP) and returns immunization histories or immunization histories plus forecasting in a response file (RSP). Specifications on query/response messaging with IMMPACT can be found in the data exchange section on the ImmPact website: https://www.maine.gov/dhhs/mecdc/infectious-disease/immunization/immpact.shtml

SENDING DATA TO IMMPACT

ImmPact accepts unsolicited HL7 v2.5.1 vaccination record updates (VXU) in real time. ImmPact uses SOAP web services as the transport mechanism. Details regarding the SOAP format can be found on the CDC website:
https://www.cdc.gov/vaccines/programs/iis/technical-guidance/soap/services.html

HL7 VXU FILE FORMAT AND CONTENT

Unsolicited Vaccination Update (VXU)

All immunization messages should be sent as a VXU type HL7 message. Regardless of whether the message contains a new record or an update to an existing record, ImmPact requires a full VXU message to be sent with all required fields populated. A full VXU message should be generated by the sending system for any updates to existing patient records, and should contain all required segments, components, and subcomponents of a full message.

VXU Message Structure (Ignored segments not shown)
The order of the segments on the table aligns with the standard VXU message structure.

Segment	Cardinality	Description	Usage	Notes
MSH	[1..1]	Message Header	**R**	Every message begins with an MSH.
PID	[1..1]	Patient Identification	**R**	Every VXU requires one PID
PD1	[1..1]	Patient Additional Demographics	**R** (State)	Every PID segment may have one PD1 segment. NOTE: If no PD1 segment is sent: 1. For new patient sharing status and reminder/recall status will be set to allowed. 2. For existing patient sharing status and reminder /recall status will not be updated
{NK1}	[0..*]	Next of Kin/Associated Parties	**RE** (State)	PID segment in a VXU may have zero or more NK1 segments. NOTE: Maine requires at least one to aid in deduplication
{			**R**	Begin Order Group – Each VXU must contain at least one Order
ORC	[1..*]	Order Request	**R**	Each RXA requires exactly one ORC
RXA	[1..1]	Pharmacy/Treatment Administration	**R**	Each ORC requires exactly one RXA
[RXR]	[0..1]	Pharmacy/Treatment Route	RE	Every RXA segment in a VXU may have zero or one RXR
[{OBX}]	[0..*]	Observation/Result	RE	Every RXA segment in a VXU may have zero or more OBX
}				End order segment

HL7 2.5.1

NOTE: [XYZ] Square brackets enclose optional segments
{XYZ} Curly brackets enclose segments which can be repeated
[{XYZ}] Defines an optional segment which can be repeated

SAMPLE VXU MESSAGE

The following sample message contains one RXA segment. The sending facility in MSH-4 is identified as 37889 and the data is coming from their internal system called
MyEMR. The file was sent on July 1, 2016 at 12:30:30. The file is using HL7 version 2.5.1 and the message ID is ME0001. The patient is George M. Jones, Jr., a white male with a patient ID of PA123456 and a birth date of 02/27/2014. His mother's maiden name is Martha G. Miller. His address is 1234 W First St in Augusta, ME, 04330 Kennebec County. His home number is 207-555-5555. His primary language is English, and he is the second child in a multiple- birth.

The publicity code is set for reminder/recall, any method, and his protection indicator is set to N, with an effective date of 7/30/2014. NK1 segment identifies his mother as the responsible person in the record, and her married name is the same as the patient's.

One new immunization of Hep B is sent given by the primary provider on
7/30/2014 with a dosage amount of .5 mL and a lot number of 0039F. The vaccine lot expires on 05/31/2020. The manufacturer is Merck, and the vaccination recorded as a completed shot (CP) and is marked as an "add". The vaccine was given as intramuscular in the left arm of the patient. The immunization was ordered by Janet Smith, MD and Dave Clark entered the information into the EMR (MyEMR). The patient is VFC eligible, and the patient's VFC eligibility status is uninsured. V.I.S was presented on 07/01/2016.

Here is the sample HL7 message. Note that indentation has been added to each segment for readability.

```
MSH|^~\&|MyEMR|37889| |IMMPACT|20160701123030-
    0700||VXU^V04^VXU_V04|ME0001|P|2.5.1|||ER|AL|||||Z22^CDCPHINVS|38901
PID|1||PA123456^^^MYEMR^MR||JONES^GEORGE^M^JR^^^L|MILLER^MARTHA^G^^^^M|20140227
    |M||2106-3^WHITE^CDCREC|1234 W FIRST ST^^AUGUSTA^ME^04330^^^23011
    ||^PRN^PH^^^207^5555555~^NET^Internet^Georgie_porgie@email.com||ENG^English^HL70296|||||
    ||2186-5^ not Hispanic or Latino^CDCREC||Y|2
PD1|||||||||||02^REMINDER/RECALL – ANY METHOD^HL70215|N|20140730|||A|20140730|
NK1|1|JONES^MARTHA^^^^^L|MTH^MOTHER^HL70063|1234 W FIRST ST^^AUGUSTA
    ^ME^04330^^H|^PRN^PH^^^207^5555555|
ORC|RE||197023^CMC||||||^Clark^Dave||^Smith^Janet^^^^^^^L^^^^^^^^^^MD |||||
RXA|0|1|20140730135400||08^HEPB-PEDIATRIC/ADOLESCENT^CVX|.5|mL^mL^UCUM||00^NEW
IMMUNIZATION
    RECORD^NIP001|1245319599^Smith^Janet^^^^^CMS^^^^NPI^^^^^^^MD
    |^^^38901|||||0039F|20200531|MSD^MERCK^MVX|||CP|A
RXR|IM^INTRAMUSCULAR^HL70162|LA^LEFT ARM^HL70163
OBX|1|CE|64994-7^Vaccine funding program eligibility category^LN|1|V03^VFC eligibility –Not
    Insured^HL70064||||||F|||20110701140500
OBX|2|CE|30956-7^Vaccine Type^LN|1|45^HepB Unspecified^CVX||||||F|||20160701123030
OBX|3|TS|29768-9^Date vaccine information sheet published^LN|1|20151105||||||F|||20160701123030
OBX|4|TS|29769-7^Date Vaccine Information sheet Presented^LN|1|20160701||||||F|||20160701123030
```

MASTER FIELD LIST

The Master Field List shows every field accepted by ImmPact in one table. Use this table as a quick reference but read the expanded segment documentation for more complete information. A few pointers on reading the table:

- Usage column code interpretations:
    o **R – Required**: A conforming sending application shall populate all "R" elements with a non-empty value
    o **R (State)** – Maine requires but is not an application requirement
    o **RE – Required but may be empty**: The element may be missing from the message but must be sent by the sending application if there is relevant data. If the sending application does not know the required values, then that element may be omitted.
    o **O – Optional**: ImmPact may read or use the information but does not require it to be sent. Please send values for optional fields if they are available.
    o **C** – Conditional: The usage code has an associated condition predicate that determines the operational requirements (usage code) of the element.
    o **E – Empty**
- This guide uses "X" as a conformance usage indicator very sparingly. Where the underlying standard indicates the segments/field/component is present for backwards compatibility ("B") or withdrawn ("W") an "X" will be used. Some conditional elements may have a usage of "X" if the predicate condition is the only case where the element is used. For all other fields/components "O" is used to enable trading partners to explore additional capabilities. Note that without a clearly agreed to complementary profile between trading partners, a sender does not have to send any elements marked as an "O", nor does a receiver have to process any elements marked as an "O".

Segment / Field	Data Element	Usage	HL7 Code Table	Comment
MSH-1	Field Separator	R		Required value is |
MSH-2	Encoding Characters	R		Required values **^~\&**
MSH-3	Sending Application	O		
MSH-4	Sending Facility	R		Sending vendor organization ID supplied by ImmPact.
MSH-5	Receiving Application	O		MEIIS
MSH-6	Receiving Facility	RE		**ImmPact or MECDC**
MSH-7	Date/time of message	R		**Format: YYYYMMDDHHMMSS+/-ZZZZ** If sending more than 14 digits, the following format is required: **YYYY[MM[DD[HH[MM[SS[S[S[S[S]]]]]]]]][+/-ZZZZ]** Example: **19970716192030.45+0100**
MSH-8	Security			See CDC Implementation Guide
MSH-9	Message type	R		**VXU^V04^VXU_V04**
MSH-10	Message control ID	R		Used to tie acknowledgement to message
MSH-11	Processing ID	R		Required by HL7. **Constrain to 'P'. Empty field or any other value will cause the message to be rejected**.
MSH-12	HL7 Version ID	R	HL70104	Version **2.5.1** only
MSH-13	Sequence Number			See CDC Implementation Guide
MSH-14	Continuation Pointer			See CDC Implementation Guide
MSH-15	Accept Acknowledgement Type	R	HL70155	
MSH-16	Application Acknowledgement Type	R	HL70016	
MSH-17	Country Code	O	HL70399	

MSH-18	Character Set			See CDC Implementation Guide
MSH-19	Principal Language of Message			See CDC Implementation Guide
MSH-20	Alternate Character Set Handling Scheme			See CDC Implementation Guide
MSH-21	Message Profile Indicator	RE		Orgs may use this field to assert adherence to, or reference, a message profile.

Segment / Field	Data Element	Usage	HL7 Code Table	Comment
MSH-22	Responsible Sending Org	R		Value of **MSH-22** must be the ImmPact Organization ID of the 'Sending Responsible Organization' who administered the immunization If **MSH-22** is empty, the message will be rejected. If both **MSH-22** and **RXA-11.4** are empty and RXA-9.1=00, the record will be rejected. Note: State will provide *Organization ID*
MSH-23	Responsible Receiving Org	O		
MSH-24	Sending Network Address			See CDC Implementation Guide
MSH-25	Receiving Network Address			See CDC Implementation Guide
PID-1	Set ID	R		The required value is '1' for first occurrence.
PID-2	Patient ID	X		
PID-3	Patient Identifier List	R		This is the patient Identifier from the provider's system, commonly referred to as medical record number. **See table Accepted Patient Identifiers in Appendix A**
PID-4	Alternate Patient ID	X		See CDC Implementation Guide
PID-5	Patient Name	R		Each name field has a 50-character length limit in ImmPact. Minimum length for PID-5.1 is 2 characters. Note: numbers in names will be rejected.

PID-6	Mother's Maiden Name	RE		*State Required* If NOFIRSTNAME or NO FIRST NAME is used in PID-5.1 (unnamed child) the mother's maiden name is required for deduplication.
PID-7	Date of Birth	R		YYYYMMDD **NOTE:** Pre-registration of unborn children will require a certain DOB to be used. If this is standard for the practice the State will provide the appropriate DOB to be sent. **IIS accepts Date/Time of Birth.**
PID-8	Administrative Sex	R	HL70001	'**M**', '**F**', '**U**'
PID-9	Patient Alias	X		
PID-10	Race	R (State)	HL70005	**See table 0005-Race in Appendix A**
PID-11	Patient Address	R (State)		Valid Street, City, State and Zip code and county
PID-12	County Code	X		County belongs in PID-11
PID-13	Home Phone Number	RE		
PID-14	Business Phone Number	O		
PID-15	Primary Language	RE	HL70296	Currently ImmPact can only process ENG (English) and SPA (Spanish). All others will be ignored.
PID-16	Marital Status	O		
PID-17	Religion	O		
PID-18	Patient Account Number	O		

PID-19	SSN	X		Not stored in IIS
PID-20	Driver's License Number	X		
PID-21	Mother's Identifier	X		
PID-22	Ethnic Group	R (State)	HL70189	Hispanic or non-Hispanic **See table 0189-Ethnic Group in Appendix A**
PID-23	Birthplace	O		
PID-24	Multiple Birth Indicator	RE	HL70136	'**Y**', '**N**', or blank. Empty value is treated as 'N' in ImmPact.
PID-25	Birth Order	C(R/O)		If PID-24 = 'Y' a birth order number (1, 2, 3, etc.…) must be entered.
PID-26	Citizenship	O		
PID-27	Veteran's Military Status	O		
PID-28	Nationality	O		
PID-29	Patient Death Date and Time	C(RE/X)		If PID-30 is valued 'Y'
PID-30	Patient Death Indicator	RE	HL70136	Field indicates whether the patient is deceased. Values are either 'Y', 'N', or empty.
PID-31	Identity Unknown Indicator	O		
PID-32 to PID-39		O		See CDC Implementation Guide
PD1-1 to PD1-10		O		See CDC Implementation Guide
PD1-11	Publicity Code	RE	HL70215	Indicates reminder/recall intentions. A blank value will default to '02' (Reminder Recall any method) in ImmPact.
PD1-12	Protection Indicator	RE		'**Y**', '**N**'. Indicates whether patient data should be 'protected' so other ImmPact providers can't view. Empty is treated as N.
PD1-13	Protection Indicator Effective Date	C(R/O)		Required if PD1-12 is supplied. **Format: YYYYMMDD**
PD1-14 &PD1-15		O		See CDC Implementation Guide
PD1-16	Immunization Registry Status	RE	HL70441	Current status of the patient in relation to the sending provider organization
PD1-17	Immunization Registry Status Effective Date	C(RE/X)		Date for the registry status reported in PD1-16. If PD1-16 is valued.
PD1-18	Publicity Code Effective Date	RE		If **PD1-11** is valued

Segment / Field	Data Element	Usage	HL7 Code Table	Comment
PD1-19 - PD1-21		O		See CDC Implementation Guide

Segment / Field	Data Element	Usage	HL7 Code Table	Comment
NK1-1	Set ID	R		Empty value will cause the NK1 segment to be ignored
NK1-2	Next of Kin Name	R		Name of next of kin or associated party
NK1-3	Relationship	R	HL70063	Personal relationship that the next of kin or associated party has to the patient.
NK1-4	Address	R (State)		
NK1-5	Phone number	RE		Example: |(207)555-1212^PRN^PH^^^207^5551212| Reference PID 13 for format details
NK1-6 to NK1-39		O		See CDC Implementation Guide
ORC-1	Order Control	R		Constrain to "**RE**"
ORC-2	Placer Order Number	RE		Uniquely identifies the order among all orders sent by a provider organization
ORC-3	Filler Order Number	RE		Uniquely identifies the order among all orders sent by a provider organization that filled the order
ORC-4 to ORC-9		O		See CDC Implementation Guide
ORC-10	Entered By	RE		This is the person that entered the immunization record into the system.
ORC-11	Verified By	O		
ORC-12	Ordering Provider	RE		The provider ordering the immunization. It is expected to be empty if the immunization record is transcribed from an historical record.
ORC-13 to ORC-16		O		See CDC Implementation Guide
ORC-17	Entering Organization	RE		If populated, use ImmPact Org ID in ORC- 17.1

ORC-18 to ORC-31		O		See CDC Implementation Guide
RXA-1	Give Sub-ID counter	R		**Constrain to '0' (zero)**
RXA-2	Administration Sub-ID counter	R		**Constrain to '1' (one).**
RXA-3	Date/Time Start of Administration	R		YYYYMMDDHHMMSS
RXA-4	Date/Time End of Administration	O		
RXA-5	Administration Code	R		**CVX Required in RXA-5.1**
RXA-6	Administered Amount	R		**Required when RXA-9= 00.** If RXA-9 is not 00 use '999' in this field.
RXA-7	Administered Units	C(RE/O)		**Required when RXA-9= 00 Expected mL^Milliliter^UCUM**
RXA-8	Administered Dosage Form	O		
RXA-9	Administered Notes	R	NIP001	Indicates historical or given shot.
RXA-10	Administering Provider	C(RE/O)		The person who administered the shot.
RXA-11	Administered-at Location	C(R/O)		The provider location where the shot was given. Organization ID supplied by ImmPact. **If RXA-9.1 = '00' then this field (RXA-11.4) is required.**
RXA-12 to RXA-14		O		See CDC Implementation Guide
RXA-15	Substance Lot Number	C(R/O)		**If RXA-9.1 = '00' and RXA-20 is valued at 'CP' or 'PA', substance lot number must be supplied.**
RXA-16	Substance Expiration Date	C(RE/O)		**If RXA-9.1 = '00' and RXA-20 is valued at 'CP' or 'PA'.**

				Note: Expiration must match ImmPact inventory for dose decrement.
RXA-17	Substance Lot Manufacturer Name	C(R/O)	HL70227	**If RXA-9.1 = '00' and RXA-20 is valued at 'CP' or 'PA'. MVX** code only.
RXA-18	Substance/Treatment Refusal reason	C(R)	NIP002	If RXA-20 is valued 'RE"
RXA-19	Indication	O		

Segment / Field	Data Element	Usage	HL7 Code Table	Comment
RXA-20	Completion Status	RE	HL70322	Empty value will be treated as '**CP**'.
RXA-21	Action Code	RE	HL71224	Empty value will be treated as '**A**'. Values '**A**', '**U**', and '**D**' accepted
RXA-22 to RXA-26		O		See CDC Implementation Guide
RXR-1	Route	R	HL70162	Route of the administration.
RXR-2	Administration Site	RE	HL70163	Body site of the administration route.
OBX	**Vaccine Eligibility**			**64994-7** Required for administered immunizations
OBX-1	Set ID – OBX	R		Sequence number of the OBX. First instance should be set to '1' (one).
OBX-2	Value Type	R		Should be "**CE**" – coded element.
OBX-3	Observation Identifier	R	NIP003	
OBX-4	Observation Sub-ID	R		Required to group related OBX segments
OBX-5	Observation Value	R	HL70064	This is where the code for VFC eligibility will be recorded at the vaccine level. **See table 0064-Financial Class (OBX-5) Funding Program Eligibility where OBX-3 = 64994-7 in Appendix A**
OBX-6 to OBX-10				See CDC Implementation Guide
OBX-11	Observation Result Status	R		Constrain to "**F**" for final.
OBX-12 & OBX-13				See CDC Implementation Guide
OBX-14	Date/Time of the Observation	RE		
OBX	**Vaccine Information Statements**	C(R/O)		Required if RXA-9 = 00 and vaccine is from public fund. one OBX segment with OBX-3.1 valued "30956-7" (vaccine type) and one OBX segment with OBX-3.1

				valued "29768-9" (publication/version date) and one OBX with OBX-3.1 valued "29769-7" (presentation /delivery date) associated. All three OBX shall have the same value in OBX-4
OBX	**Serological evidence of Immunity**			OBX-3.1= 75505-8 then RXA-5.1=998 and RXA-20=NA Value Set OID - 2.16.840.1.114222.4.11.7245 Value Set Code:: PHVS_SerologicalEvidenceOfImmunity_IIS
OBX-3	Observation Identifier	R		OBX-3.1= 75505-8
OBX-5	Observation Value	R	SCT	**See table Serological evidence of Immunity in Appendix A**
OBX	**Disease with presumed Immunity**			OBX-3.1= 59784-9 then RXA-5.1=998 and RXA-20=NA Value Set OID - 2.16.840.1.114222.4.11.3293 Value Set Code:: PHVS_EvidenceOfImmunity_IIS
OBX-3	Observation Identifier	R		OBX-3.1=59784-9 then RXA-5.1=998 and RXA-20=NA
OBX-5	Observation Value	R	SCT	**See table Disease with presumed Immunity in Appendix A**
OBX	**Reaction to vaccine**			OBX-3.1= 31044-1 then RXA-5.1 is not 998 and RXA-20 is CP or PA Value Set OID - 2.16.840.1.114222.4.11.3289 Value Set Code:: PHVS_VaccinationReaction_IIS
OBX-3	Observation Identifier	R		OBX-3.1= 31044-1 then RXA-5.1 is not 998 and RXA-20 is CP or PA

OBX-5	Observation Value	R	SCT CDCPHIN VS	**See table Reaction to vaccine in Appendix A**
OBX	**Contraindication**			OBX-3.1= 30945-0 then RXA-5.1 is not 998 and RXA-20 is CP or PA Value Set OID - 2.16.840.1.114222.4.11.3288 Value Set Code:: PHVS_VaccinationContraindication_IIS
OBX-3	Observation Identifier	R		
OBX-5	Observation Value	R	SCT CDCPHIN VS	**See table Contraindication in Appendix A**

SEGMENT DETAILS

MSH-16: Application acknowledgment type
Indicates whether a response should be returned, and if so, under what conditions. Empty MSH-16 will act as 'ER'
HL7-defined Table 0155 – Accept/Application Acknowledgment conditions

Value	Description	Status
AL	Always	accepted
NE	Never	accepted
ER	Error/Reject conditions only	accepted
SU	Successful completion only	accepted

MSH-22: Sending Responsible Organization
The ImmPact Org Code (ID) for the location that 'owns' the vaccination should be sent in MSH-22. The ImmPact Org Code (ID) in MSH-22 should match the value sent in RXA-11.4 of a given shot in the HL7 message. For inventory decrementing in ImmPact, the value in MSH-22 will be the ImmPact Org Code (ID) where the vaccine was administered. If MSH-22 is empty, the value will default to the ImmPact Org Code (ID) sent in RXA-11.4. If there are multiple RXA segments, with multiple Org Codes (IDs) in one message, and MSH-22 is empty, the message will be rejected.

NOTES: Patient Mapping in ImmPact

The ImmPact system assigns a unique patient ID to each patient in the system. VXU files from providers include demographic information about a patient along with the provider's unique patient identifier. To aid in patient de-duplication, it is very important to provide as much demographic data on the patient as possible. The patient name, date of birth, and sex are required fields. Additional information about the parents or guardians—in particular the birth mother name—as well as accurate current address are all used to identify patients.

PID-3: Patient identifier list
This is the patient ID from the provider's system, commonly referred to as the medical record number.

Warning: The sending system's patient id is a required field. The message will be rejected if this id is not sent or cannot be found in this field. The identifier type code in PID-3.5 is also required and if not submitted the message will be rejected.

Position	Field Name	Status
1	**id**	**required**
2	check digit	ignored
3	code identifying the check digit scheme employed	ignored
4	**assigning authority**	**required; if empty, a warning ACK will be returned**
5	**identifier type code**	**required**
6	assigning facility	ignored

PID-5: Patient name

The legal name must be sent in the first repetition. The last, first and middle names must be alpha characters only (A-Z). The last name or the given name should not contain the patient's suffix (e.g. JR or III). The given name should not include the patient's middle name or middle initial. These should be sent in their appropriate fields.

Note: If child is unnamed use NOLASTNAME or NO LAST NAME in PID-5.1.

If child is unnamed use NOFIRSTNAME or NO FIRST NAME in PID-5.2. Baby boy and baby girl will be rejected.

If NOFIRSTNAME or NOLASTNAME is used in PID-5 (unnamed child) the mother's maiden name is ***required*** for deduplication.

WARNING: This message will be rejected if the first and/or last name is blank.

Position	Field	Status
1	**family name**	**required**
2	**given name**	**required**
3	**middle initial or name**	**required, but may be empty**
4	**suffix**	**required, but may be empty**
5	prefix	ignored
6	degree	ignored
7	**name type code**	**required, but may be empty**
8	name representation code	ignored

NOTE: Repetitions are accepted in this field. The first repetition shall contain the legal name. Values for the name type code field are from HL7-defined Table 0200 – Name type

PID-6: Mother's maiden name

This field should contain the patient's mother's maiden name as well as the mother's first name. This field is used for patient matching and is **highly desired** if available. If the field is valued, the requirements below must be followed.

Position	Field	Status
1	**family name**	**required**
2	**given name**	**required**
3	middle initial or name	ignored
4	suffix	ignored
5	prefix	ignored
6	degree	ignored
7	**name type code**	**required, but may be empty**
8	name representation code	ignored

NOTE: Values for the name type code field are from HL7-defined Table 0200 – Name type

PID-10: Race

Patient's race is sent in this field. If the field is valued, the requirements below must be followed.

Position	Field	Status
1	**identifier**	**required**
2	text	optional
3	**name of coding system**	**required, but may be empty; use HL7005**
4	alternate identifier	ignored
5	alternate text	ignored
6	name of alternate coding system	ignored

NOTE: Values for the identifier field are from User-defined Table 0005 – Race. Repetitions are accepted in this field.

PID-11: Patient address

The patient's address is sent in this field. If the field is valued, the requirements below must be followed.

Position	Field	Status
1	**street address**	**required**
2	**other designation**	**required, but may be empty**
3	**city**	**required**
4	**state or province**	**required**
5	**zip or postal code**	**required**
6	country	optional
7	**address type**	**required, but may be empty**
8	other geographic designation	ignored
9	**county/parish code**	**required** Format should be FIPS code or county name spelled out (not case sensitive) Example: KENNEBEC
10	census tract	ignored
11	address representation code	ignored

PID-13: Phone number – home

The patient's home phone number is sent in this field. If the field is valued, the requirements below must be followed. PID 13.6 is area code
PID 13.7 is seven-digit phone#
Example: |(207)555-1212^PRN^PH^^^207^5551212|

Position	Field	Status
1	phone number	Optional
2	**use code**	**Required** (Warning ACK returned if code invalid or not submitted)
3	equipment type	Required.
4	email	**C (R/X)** If PID-13.2 (Telecommunication use code is valued as "NET".
5	country	ignored
6	**area**	**C (RE/X)** If PID-13.2 (Telecommunication use code is valued not "NET".
7	**phone**	**C (RE/X)** If PID-13.2 (Telecommunication use code is valued not "NET".
8	extension	ignored
9	any text	ignored

 NOTE: Values for the telecommunication use code used in ImmPact are PRN and NET. They are   from HL7-defined table 0201. Values for the telecommunication equipment code used in ImmPact are PH, CP, X.400, Internet. See HL7-defined table 0202 and HL7-defined table 0201 in Appendix A. Repetitions are allowed in this field.

PID-22: Ethnic Group

This field further defines the patient's ancestry. Refer to Table 0189 - Ethnic Group

PID-24: Multiple Birth Indicator

This field indicates whether the patient was part of a multiple birth. If empty, ImmPact will default this field to "N".

Value	Description
Y	The patient was part of a multiple birth
N	The patient was a single birth

Note: Refer to HL7-defined Table 0136 – Yes/No Indicator for valid values.

PID-25: Birth Order

If the patient is part of a multiple birth, a value (number) indicating the patient's birth order is entered into this field. If PID-24 is populated with a 'Y', then this field shall be populated.

PID-29: Patient Death Date and Time

This field contains the date and time at which the patient death has occurred. Must be valued if PID-30 is valued with a 'Y'.

PID-30: Patient Death Indicator

This field indicates whether the patient is deceased.

PD1-11: Publicity code

This field indicates whether the patient wishes to receive reminder/recall notices. Use this field to indicate a specific request from the patient/parent or leave blank. An empty value will be treated the same as a "02" value in this field, meaning that it is OK for a provider site to send reminder/recall notices regarding immunizations to this patient

Position	Field Name	Status
1	**identifier**	**required, but may be empty**
2	text	optional
3	**name of coding system**	**required, but may be empty; use HL70215 if valued**
4	alternate identifier	ignored
5	alternate text	ignored
6	name of alternate coding system	ignored

Note: Values for this field can be found in User-defined Table 0215 – Publicity code

PD1-12: Protection Indicator

This field identifies whether a person's information may be shared with other ImmPact users. The protection state must be actively determined by the clinician. ImmPact will translate an empty value sent in PD1-12 as **disclosed/agree to share**. (*Please see the text below for more detailed information regarding disclosure and sharing*)

Value in HL7 2.5.1	HL7 Standard
Y	Protect the data. Client (or guardian) has indicated that the information shall be protected. **(Do not share data within or outside registry)**
N	It is not necessary to protect the data from other clinicians. The client (or guardian) has indicated that the information does not need to be protected. **(Sharing is OK)**

NK1: Next of Kin Segment

NK1-1: Set ID

This field contains the number that identifies this transaction. For the first occurrence of the segment, the sequence number shall be '1' (one), for the second occurrence the sequence number shall be '2' (two), and so on. **NOTE:** This field is required if the data in the NK1 segment data is to populate ImmPact.

NK1-2: Name

This field contains the name of the next of kin or associated party. If the field is valued, the requirements below must be followed.

Position	Field	Status
1	**family name**	**required**
2	**given name**	**required**
3	middle initial or name	required, but may be empty
4	suffix	optional
5	prefix	ignored
6	degree	ignored
7	name type code	ignored
8	name representation code	ignored

NK1-3: Relationship

This field contains the actual personal relationship that the next of kin/associated party has to the patient. If the field is valued, the requirements below must be followed.

Position	Field	Status
1	**identifier**	**required**
2	text	optional
3	**name of coding system**	**required, but may be empty. use HL70063**
4	alternate identifier	ignored
5	alternate text	ignored
6	name of alternate coding system	ignored

Note: For the identifier, please refer to User-defined table 0063 – Relationship.

NK1-4: Address

This field contains the address of the next of kin or associated party. The field follows the same address formatting rule as the PID-11 field.

NK1-5: Phone Number

This field contains the phone number of the next of kin or associated party. The field follows the same phone number formatting rule as the PID-13 field.

ORC-12: Ordering Provider

Position	Field	Status
1	**Identifier**	**ignored**
2	**Family name**	**required**
3	**Given name**	**required**
4	**Middle name**	**optional**
9	**Assigning authority**	**required**
21	**Title**	**ignored**

For the ordering physician to be retained in Maine IIS the values sent in ORC-12.2 and ORC-12.3 must match the last name and first name of a physician in the list for the administering organization in RXA-11.4.

Note: See table 0363-Assigning authority in the HL7 v2.5.1 Implementation Guide for Immunization Messaging, release 1.5

RXA: Pharmacy/Treatment Administration Segment

The RXA segment carries pharmacy administration data. This segment is required to indicate which vaccinations are given. This segment is required if there are vaccinations to report.
See CDC Implementation Guide: Table 5-12 Pharmacy/Treatment Administration (RXA)

RXA-5: Administered code

This field identifies the medical substance administered. **CVX codes are required.**

Position	Field	Status
1	**Identifier (CVX code)**	**required**
2	Text description	optional
3	**name of coding system**	**Required (CVX).**
4	alternate identifier (NDC number, CPT code or Trade Name)	NDC format is 5-4-2 If supplied must match ImmPact trade name. See https://www.maine.gov/dhhs/mecdc/infectious-disease/immunization/immpact.shtml
5	alternate text description	optional
6	name of alternate coding system	C(RE/O) Required if RXA-5.5 is valued

For the CVX code set, provide information in the first triplet (components 1 – 3) of the RXA-5 field. Provide the CVX Code value in the first component, text description in the second component, and the name of the coding system 'CVX' in the third component.
The second triplet can be used to send NDC or CPT.
 Examples: |09^Td/Tdap^CVX| |09^Td/Tdap^CVX^13533-0131-01^TdVax^NDC|

For Trade Name code set, provide information in the second triplet (components 4 – 6) of the RXA-5 field. Provide the coding system identifier in the fourth component, text description in the fifth component, and the name of coding system (WVTN) in the sixth component.

 Trade Name example: |120^DTaP-Hib-IPV^CVX^Pentacel^DTaP-Hib-IPV combination^WVTN|

CVX and NDC crosswalk tables are available and maintained by the Centers for Disease Control and Prevention, Immunization Information System Support Branch (IISSB) for use in HL7 data transmission. The code sets are available through their website: https://www.cdc.gov/vaccines/programs/iis/code-sets.html. New codes are added several times a year.

CDC offers an email service that sends updates when new codes are added to their tables. Information about this service is available on the site listed above. It is critical to keep code

sets up-to-date in order to appropriately report vaccinations. Steps should be taken to ensure that someone is receiving these emails and keeping the code sets up-to-date.

RXA-6: Administered amount

The amount of vaccine that was given. This should be expressed in milliliters (mL). The amount should be placed here and the units in RXA-7. **Do not put the units in this field.**
NOTE: This field is required. If RXA-9 is not 00, use '999' in this field.

RXA-7: Administered units

The units are associated with the number in RXA-6. A value of mL is expected. Example: mL^mL^UCUM

Position	Field	Status
1	**identifier**	**required, but may be empty; should be 'mL'**
2	text	ignored
3	**name of coding system**	**required, but may be empty; use "UCUM" if valued**
4	alternate identifier	ignored
5	alternate text	ignored
6	name of alternate coding system	ignored

RXA-9: Administration notes
NOTE: This field is required and must be '00' (administered vaccine) for inventory decrementing.

Position	Field	Status
1	**identifier**	**required; Health Plans must use NIP001 code '01'**
2	text	optional
3	**name of coding system**	**required, but may be empty; use NIP001 if valued**
4	alternate identifier	ignored
5	alternate text	ignored
6	name of alternate coding system	ignored

RXA-10: Administering provider

This field is intended to contain the name and provider ID of the person physically administering the vaccine. This field is required but may be empty. If the field is valued, it must follow the specifications below.

Position	Field Name	Status
1	**ID number**	**required, but may be empty**
2	**family name**	**required**

Position	Field Name	Status
3	**given name**	**required**
4	middle initial or name	optional
5	suffix	optional
6	prefix	optional
7	degree	**No longer used. Use professional suffix in RXA-10.21**
8	source table	ignored
9	**assigning authority**	**required**
10	**name type code**	**required, but may be empty**
11	identifier check digit	ignored
12	code identifying the check digit scheme employed	ignored
13	**identifier type code**	**required**
14		Components 14 – 20 are ignored
21	Professional Suffix	Optional

 For the administering provider to be retained in the Maine IIS the values sent in RXA-10.2 and RXA-10.3 must match the last name and first name of a clinician in the list for the administering organization in RXA-11.4.

Note: Use a value from Table 0203 – Identifier type from CDC HL7 Version 2.5.1 Implementation Guide for Immunization Messaging Release 1.5

RXA-11: Administered at location

The administered at location is used to indicate the facility at which the immunization was given.

Use the ImmPact org id supplied by the Maine IIS in RXA-11.4. It must match the value sent in MSH-22.

NOTE: This field is required for decrementing inventory in ImmPact through data exchange

Position	Field Name	Status
1	point of care	ignored
2	room	ignored
3	bed	ignored
4	**facility**	**required if RXA-9.1 value is '00'**
5	location status	ignored
6	patient location type	ignored
7	building	ignored
8	floor	ignored
9	street address	optional
10	other designation	optional
11	city	optional
12	state or province	optional
13	zip or postal code	optional
14	country	optional
15	address type	ignored
16	other geographic designation	ignored

RXA-17: Substance manufacturer

This field contains the manufacturer of the vaccine administered. If the field is valued, the requirements below must be followed. Code system "**MVX**" should be used to code this field.

The CDC's National Center for Immunization and Respiratory Diseases (NCIRD) developed and maintains HL7 Table 0227, Manufacturers of Vaccines (MVX). The table can be found here:

http://www2a.cdc.gov/vaccines/iis/iisstandards/vaccines.asp?rpt=mvx

Position	Field	Status
1	**identifier**	**required**
2	text	optional
3	**name of coding system**	**required, but may be empty; use "MVX"**
4	alternate identifier	ignored
5	alternate text	ignored
6	name of alternate coding system	ignored

RXA-21: Action code

This field indicates the action expected by the sending system. **An empty field will be treated as 'A'.**

Value	Description	Status
A	Add	accepted
U	Update	accepted
D	Delete	accepted NOTE: Administered doses will not delete

NOTE: INVENTORY DECREMENTING IN IMMPACT THROUGH DATA EXCHANGE:

Provider organizations have the ability to have vaccine doses decrement from inventory in ImmPact through data exchange. For the inventory to decrement correctly in ImmPact:

1. Inventory with matching lot number and vaccine eligibility need to exist in ImmPact.

2. The following fields in the RXA and OBX segment of the HL7 message must be populated accurately.

Segment / Field	Data Element	Comments
MSH-22	Responsible Sending Org	ImmPact Org Code (ID) in MSH-22, must match the ImmPact Org Code (ID) of the site where the vaccine inventory will be drawn from.
RXA-5.1	Administration Code	Must match the CVX code of a vaccine lot in ImmPact inventory.
RXA-6	Administered Amount	Must be appropriate dose amount in mL
RXA-7	Administered Units	Must be appropriate units (mL).
RXA-9.1	Administered Notes	Must be '00'
RXA-11.4	Administered-at Location	ImmPact Org Code (ID) in this field must match the ImmPact Org Code (ID) in MSH-22.
RXA-15	Substance Lot Number	Must match lot number in ImmPact inventory.
RXA-20	Completion Status	Must be 'CP', 'PA'
RXA-21	Action Code	Must be 'A' or 'U'
OBX-5.1	Observation Value	VFC Vaccine Eligibility Category sent in this field must match with the funding category of the vaccine lot in the ImmPact inventory.

RXR: Pharmacy Route Segment

The Pharmacy Route (RXR) segment is a continuation of RXA segment.

Position	Field	Status
1	**route**	**required, but may be empty**
2	**site**	**required, but may be empty**
3	administration device	ignored
4	administration method	ignored
5	routing instruction	ignored

RXR-1: Route

The route is the place or method that was used to give the vaccination. This is normally dependent on the type of vaccination given. If the field is valued, the requirements below must be followed.

Position	Field	Status
1	**identifier**	**required**
2	text	optional
3	**name of coding system**	**required, but may be empty**
4	alternate identifier	ignored
5	alternate text	ignored
6	name of alternate coding system	ignored

NOTE: Codes for the identifier can be found in HL7-defined Table 0162 – Route of administration. **FDA NCI Thesaurus codes are now accepted in RXR-1.1.**

RXR-2: Site

The site is the place on the body that the vaccination was given. This is normally decided at time of administration. If the field is valued, the requirements below must be followed.

Position	Field	Status
1	**identifier**	**required**
2	text	optional
3	**name of coding system**	**required, but may be empty; use HL70163**
4	alternate identifier	ignored
5	alternate text	ignored
6	name of alternate coding system	ignored

NOTE: Codes for the identifier can be found in HL7-defined Table 0163 – Administrative site.

HL7 ACK FILE FORMAT AND CONTENT

There are two fields stored in the MSH segment that pertain to acknowledgements: MSH-15 and MSH- 16. The MSH-16 field, Application Acknowledgement Type, is used to determine the conditions for sending an acknowledgement message indicating the success or failure to process the data contained in the VXU message. The following table shows results for the five potential values:

Value	Description	Status
AL	Always	ACK message always sent
NE	Never	ACK message never sent
ER	Error	ACK message sent only on error condition
SU	Success	ACK message sent only on successful load
<blank>	Blank value	If blank MSH-16 treated as 'ER'

ImmPact ACK Segment Structure

Segment	Cardinality	Usage	Comment
MSH	**(1..1)**	**R**	**Message Header Segment**. Every message begins with an MSH.
MSA	**(1..1)**	**R**	**Message Acknowledgment.** Every ACK has at least one MSA segment.
[{ERR}]	**(0..*)**	**RE**	**Error description. Included if there are errors**

MSH – Message Header Segment
The Message Header Segment for the ACK will have the same number of fields as the VXU MSH segment. The values in the fields will reflect information about a previously received, single record. The data types for each component and sub-component are the same for the VXU MSH and the ACK MSH

MSA – Message Acknowledgment Segment

The MSA segment contains information used to identify the receiver's acknowledgement response to an identified prior message.

Position	Field Name	Status
1	**Acknowledgment Code**	**Required**
2	**Message Control ID**	**Required**

MSA-1 – Acknowledgment code

This field contains an acknowledgment code from table HL70008.

In MSA-1 only the value shown in the table will be used.

Value (MSA-1)	Description	Comment
AA	Application Accept	Message was accepted without error
AE	Application Error	Message was processed and errors are being reported.
AR	Application Reject	Message was rejected because one of the following occurred: • Unsupported Message Type • Unsupported event code • Unsupported processing ID • Unable to process for reasons unrelated for format or content

MSA-2 – Message Control ID

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

ERR – Error Segment

The error segment reports information about errors or warnings in processing the message. The segment may be repeated. Each error or warning will have its' own ERR segment.

Position	Field Name	Status
1	Error code and location	Not supported in v2.5.1
2	**Error location**	**Required**
3	**HL7 error code**	**Required (refer to HL7 table 0357)**
4	**Severity**	**Required; if error occurs, will use "E", if warning occurs will use 'W'**
5	**Application Error Code**	**Required, but may be empty (refer to User Defined table 0533)**
6	Application Error Parameter	Optional
7	Diagnostic Information	Optional
8	**User Message**	**Required, but may be empty**

EXAMPLE ACK MESSAGES GENERATED BY ImmPact:

WARNING   **(Informational)**
MSH|^~\&|ImmPact IIS2.0.0|ImmPact IIS
|||IRPH|20170630||ACK^V04^ACK|1|P|2.5.1|||||||||||ImmPact IIS|IRPH **MSA**||1
ERR||RXA^1^10^1^13|0^Message accepted^HL70357|W|5^Table value not
found^HL70533|||Informational error - No value was entered for RXA-10.13

ERROR   **(Message**   **Rejected)**
MSH|^~\&|ImmPact IIS2.0.0|ImmPact IIS
|||IRPH|20160630||ACK^V04^ACK|1|P|2.5.1|||||||||||ImmPact IIS
MSA|AE|1791129
ERR||PID^1^3^0|101^Required field missing^HL70357|E|6^Required observation
missing^HL70533|||MESSAGE REJECTED - REQUIRED FIELD PID-3-5 MISSING

APPLICATION REJECTION
MSH|^~\&|ImmPact IIS2.0.0|ImmPact IIS
|||IRPH|20160630||ACK^V04^ACK|1|P|2.5.1|||||||||||ImmPact IIS|IRPH
MSA|AR|1791129
ERR||MSH^1^11|202^Unsupported processing ID^HL70357|E|4^Invalid
value^HL70533|||MESSAGE REJECTED. INVALID PROCESSING ID. MUST BE 'P'

VALID MESSAGE
MSH|^~\&|ImmPact IIS2.0.0|ImmPact IIS
|||IRPH|20160630||ACK^V04^ACK|1|P|2.5.1|||||||||||ImmPact IIS|IRPH
MSA|AA|1791129

APPENDIX A

HL7 TABLES

0001-Sex (PID-8)

Value	Description	Definition
F	Female	Person reports that she is female.
M	Male	Person reports that he is male.
U	Unknown/undifferentiated	No assertion Is made about the gender of the person.

0005-Race (PID-10)

US race codes	Description
1002-5	American Indian or Alaska Native
2028-9	Asian
2076-8	Native Hawaiian or Other Pacific Islander
2054-5	Black or African - American
2106-3	White
2131-1	Other Race

0201-Telecommunication use code (PID-13)

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

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
TDD	Telecommunications Device for the Deaf
TTY	Teletypewriter

0063-Relationship (NK1-3)

Value	Description
BRO	Brother
CGV	Care giver
CHD	Child
FCH	Foster child
FTH	Father
GRD	Guardian
GRP	Grandparent
MTH	Mother
OTH	Other
PAR	Parent
SCH	Stepchild
SEL	Self
SIB	Sibling
SIS	Sister
SPO	Spouse

0162-Route of Administration (RXR-1)

FDA NCI Thesaurus (NCIT)	HL 7-01 62	Description	Definition
C38238	ID	Intradermal	within or introduced between the layers of the skin
C28161	IM	Intramuscular	within or into the substance of a muscle
C38284	NS	Intranasal	Given by nose
C38276	IV	Intravenous	administered into a vein
C38288	PO	Oral	administered by mouth
	OTH	Other/Miscellaneous	
C38676		Percutaneous	made, done, or effected through the skin.
C38299	SC	Subcutaneous	Under the skin or between skin and muscles.
C38305	TD	Transdermal	describes something, especially a drug, that is introduced into the body through the skin

|IM^INTRAMUSCULAR^HL70162|

0163-Administrative Site (RXR-2)

HL7 0163	Description
LT	Left Thigh
LA	Left Arm
LD	Left Deltoid
LG	Left Gluteous Medius
LVL	Left Vastus Lateralis
LLFA	Left Lower Forearm
RA	Right Arm
RT	Right Thigh
RVL	Right Vastus Lateralis
RG	Right Gluteous Medius
RD	Right Deltoid
RLFA	Right Lower Forearm
LN	Left Nares
RN	Right Nares
BN	Bilateral Nares
MO	Mouth

0189-Ethnic Group (PID-22)

US ethnicity codes (CDCREC)	Description
2135-2	Hispanic or Latino
2186-5	not Hispanic or Latino
	Unknown

0296-Language (PID-15)

Value	Description
Eng	English
Spa	Spanish

0322-Completion Status (RXA-20)

Value	Description
CP	Complete
RE	Refused
NA	Not Administered
PA	Partially Administered

0441-Immunization Registry Status (PD1-16)

Value	Description
A	Active
I	Inactive--Unspecified
L	Inactive-Lost to follow-up (cannot contact)
M	Inactive-Moved or gone elsewhere (transferred)
P	Inactive-Permanently inactive (do not re-activate or add new entries to this record)
U	Unknown

0323-Action Code (RXA-21)

Value	Description
A	Add
D	Delete
U	Update

Accepted Patient Identifiers (PID-3)

Value	Description
MR	Medical Record Number
PI	Patient Internal Identifier
PN	Person Number
PRN	Provider Number
PT	Patient External Identifier

NIP002 Substance Refusal Reasons (RXA-18)

Value	Description
00	Parental Decision
01	Religious Exemption
02	Other
03	Patient Decision

NIP003 Observation Identifiers (OBX-3)

CDC-defined NIP003 - Observation identifiers

Use in OBX-3) – From CDC HL7 Version 2.5.1 Implementation Guide

Data within this column is a mixture of base HL7 data types (CE, DT, etc.) and data type flavors defined by the implementation guide (TS_NZ). When a guide specific flavor is specified, OBX-2 of the message should be populated with the base HL7 data type for that flavor. For example, if DT_D is listed in the table, OBX-2 will be populated with DT.

Code[45]	Description	Corresponding data type (indicate in OBX-2)	Corresponding observation value *EXAMPLE* OR code table to use (value in OBX-5)
Vaccine Funding Program Eligibility Category—Use in OBX-3 to indicate that OBX-5 will contain the funding program eligibility category for a given immunization.			
64994-7	Vaccine funding program eligibility category	(CE)	HL70064
Vaccine Funding Source – Use in OBX-3 to indicate that OBX-5 will contain the funding source for a given immunization.			
30963-3	Vaccine funding source	(CE)	Value Set OID - 2.16.840.1.114222.4.11.3287 **Value Set Code:: PHVS_ImmunizationFundingSource_IIS**
Vaccine Type Identifier			
30956-7	Vaccine Type (Vaccine group or family)	(CE)	CVX (CVX codes – use the codes described as "unspecified formulation" as needed.) NOTE: this code is preferred over 38890-0.
38890-0	Component Vaccine Type	(CE)	CVX (CVX codes – use the codes described as "unspecified formulation" as needed.)
Contraindications, Precautions, Indications and Immunities			
LOINC ® Code[45]	**Description**	**Corresponding data type (indicate in OBX-2)**	**Corresponding observation value *EXAMPLE* OR code table to use (value in OBX-5)**
30946-8	Vaccination contraindication/precaution effective date	(DT_D)	*19970522*
30944-3	Vaccination temporary contraindication/precaution expiration date	(DT_D)	*19990523*

30945-0	Vaccination contraindication/precaution	(CE)	Value Set OID - 2.16.840.1.114222.4.11.3288 **Value Set Code::** **PHVS_VaccinationContraindication_IIS**
31044-1	Reaction	(CE)	Value Set OID - 2.16.840.1.114222.4.11.3289 **Value Set Code::** **PHVS_VaccinationReaction_IIS**
59784-9	Disease with presumed immunity	(CE)	Value Set OID - 2.16.840.1.114222.4.11.3293 **Value Set Code::** **PHVS_EvidenceOfImmunity_IIS**
75505-8	Serological Evidence of Immunity	(CE)	**Value Set OID -** 2.16.840.1.114222.4.11.7245 **Value Set Code::** PHVS_SerologicalEvidenceOfImmunity_IIS
59785-6	Indications to immunize	(CE)	Value Set OID - 2.16.840.1.114222.4.11.3290 **Value Set Code::** **PHVS_VaccinationSpecialIndications_IIS**
Vaccine Information Statement (VIS) Dates			
69764-9	Document type	CE	Value Set OID: 2.16.840.1.114222.4.11.6041 Value Set Code: PHVS_VISBarcodes_IIS

LOINC ® Code[45]	Description	Corresponding data type (indicate in OBX-2)	Corresponding observation value *EXAMPLE* OR code table to use (value in OBX-5)
29768-9	Date Vaccine Information Statement Published	DT_D	*19900605*
29769-7	Date Vaccine Information Statement Presented	DT_D	*199307311615*
Smallpox Take Read: These codes allow information about evaluation of a smallpox vaccination, called the take response.			
46249-9	VACCINATION TAKE-RESPONSE TYPE	*(ST)*	Major Take, Equivocal, Not Available
46250-7	VACCINATION TAKE-RESPONSE DATE	*DT*_D	20091221

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Codes (LOINC) Committee.

OBX Details

Vaccine Information Statement OBX Group	
First OBX	
30956-7	Document/Vaccine Type
Second OBX	
29768-9	Publication/Version Date
Third OBX	
29769-7	Presentation/Delivery Date
All three OBX shall have the same value in OBX-4.	

0064-Financial Class (OBX-5) Funding Program Eligibility where OBX-3 = 64994-7

Code	Label	Definition
V01	Not VFC eligible **Private Stock**	Patient does not qualify for VFC because they do not have one of the statuses below. (V02-V05)
V02	VFC eligible-Medicaid/Medicaid Managed Care **VFC Eligible-Medicaid/MaineCare-Under 19**	Patient is currently on Medicaid or Medicaid managed care and < 19 years old and the vaccine administered is eligible for VFC funding.
V03	VFC eligible-Uninsured **VFC Eligible - Not Insured**	Patient does not have private insurance coverage and < 19 years old and the vaccine administered is eligible for VFC funding.
V04	VFC eligible- American Indian/Alaskan Native **VFC Eligible- American Indian or Alaskan Native**	Patient is a member of a federally recognized tribe and < 19 years old and the vaccine administered is eligible for VFC funding.
V05	VFC eligible-Federally Qualified Health Center Patient(under-insured) **VFC Eligible-Underinsured**	Patient has insurance, but insurance does not cover vaccines, limits the vaccines covered, or caps vaccine coverage at a certain amount and so client is eligible for VFC coverage at a Federally Qualified Health Center. The patient must be receiving the immunizations at the FQHC or a FQHC designated clinic and < 19 years old and the vaccine administered is eligible for VFC funding.
V07	Local-specific eligibility **317 Eligible – Uninsured Adult**	Adult Patient is eligible for state supplied vaccine based on local specific rules and the vaccine administered is eligible for state- funding. It should only be used if the state has not published local codes for these programs.
MEA01	**State Eligible – Insured – Under 19**	Patient is insured and is <19 years old

Here is an example of how to report VFC eligibility in the OBX segment:

OBX|1|CE|64994-7^Vaccine funding program eligibility category^LN||V02^VFC eligible-Medicaid/MaineCare – Under 19 ^HL70064||||||F|||20110701130100

Contraindications when OBX-3 30945-0

OBX-5 Concept Code	Definition	HL7 Table 0396 Code
VXC30	allergy (anaphylactic) to proteins of rodent or neural origin	CDCPHINVS
VXC17	allergy (anaphylactic) to 2-phenoxyethanol	CDCPHINVS
VXC18	allergy to baker's yeast (anaphylactic)	CDCPHINVS
91930004	allergy to eggs (disorder)	SCT
294847001	Gelatin allergy (disorder)	SCT
294468006	neomycin allergy (disorder)	SCT
294466005	streptomycin allergy (disorder)	SCT
VXC19	allergy to thimerosal (anaphylactic)	CDCPHINVS
VXC20	allergy to previous dose of this vaccine or to any of its unlisted vaccine components (anaphylactic)	CDCPHINVS
402306009	allergy to aluminum (disorder)	SCT
300916003	Latex allergy (disorder)	SCT
294530006	Polymyxin B allergy (disorder)	
VXC21	Previous history of intussusception	CDCPHINVS
VXC22	encephalopathy within 7 days of previous dose of DTP or DTaP	CDCPHINVS
VXC23	. current fever with moderate-to-severe illness	CDCPHINVS
VXC24	. current acute illness, moderate to severe (with or without fever) (e.g., diarrhea, otitis media, vomiting)	CDCPHINVS
27624003	chronic illness (disorder)	SCT
VXC25	History of Arthus hypersensitivity reaction to a tetanus containing	CDCPHINVS

	vaccine administered < 10 yrs previously	
VXC26	underlying unstable, evolving neurologic disorders, (including seizure disorders, cerebral palsy, and developmental delay)	CDCPHINVS
VXC27	immunodeficiency due to any cause, including HIV (hematologic and solid tumors, congenital immunodeficiency, long-term immunosuppressive therapy, including steroids)	CDCPHINVS
77386006	Patient currently pregnant (finding)	SCT
302215000	Thrombocytopenic disorder (disorder)	SCT
161461006	History of - purpura (situation)	SCT

Reactions when OBX-3 31044-1

OBX-5 Concept Code	Definition	HL7 Table 0396 Code
39579001	Anaphylaxis (disorder)	SCT
81308009	Disorder of Brain (disorder)	SCT
VXC9	persistent, inconsolable crying lasting > 3 hours within 48 hours of dose	CDCPHINVS
VXC10	collapse or shock-like state within 48 hours of dose	CDCPHINVS
VXC11	convulsions (fits, seizures) within 72 hours of dose	CDCPHINVS
VXC12	fever of >40.5C (105F) within 48 hours of dose	CDCPHINVS
VXC13	Guillain-Barre syndrome (GBS) within 6 weeks of dose	CDCPHINVS
VXC14	Rash within 14 days of dose	CDCPHINVS
VXC15	Intussusception within 30 days of dose	CDCPHINVS

Disease with presumed immunity when OBX-3 59784-9

OBX-5 Concept Code	Definition	HL7 Table 0396 Code
409498004	Anthrax (disorder)	SCT
397428000	Diphtheria (disorder)	SCT
76902006	Tetanus (disorder)	SCT
27836007	Pertussis (disorder)	SCT
40468003	Viral hepatitis, type A (disorder)	SCT
66071002	Type B viral hepatitis (disorder)	SCT
91428005	Haemophilus influenzae infection (disorder)	SCT
240532009	Human papilloma virus infection (disorder)	SCT
6142004	Influenza (disorder)	SCT
52947006	Japanese encephalitis virus disease (disorder)	SCT
14189004	Measles (disorder)	SCT
36989005	Mumps (disorder)	SCT
36653000	Rubella (disorder)	
23511006	Meningococcal infectious disease (disorder)	SCT
16814004	Pneumococcal infectious disease (disorder)	SCT
398102009	Acute poliomyelitis (disorder)	SCT
14168008	Rabies (disorder)	SCT
18624000	Disease due to Rotavirus (disorder)	SCT
4834000	Typhoid fever (disorder)	SCT
111852003	Vaccinia (disorder)	SCT
38907003	Varicella (disorder)	SCT
16541001	Yellow fever (disorder)	SCT

Serological Evidence of immunity when OBX-3 75505-8

OBX-5 Concept Code	Definition	HL7 Table 0396 Code
341112003	Mumps (finding)	SCT
278968001	Rubella (finding)	SCT
371111005	Measles (finding)	SCT
371113008	Varicella (finding)	SCT
271511000	Hepatitis B (finding)	SCT
278971009	Hepatitis A (finding)	SCT
341112003	Mumps (finding)	SCT