

Michigan Care Improvement
Registry (MCIR)

**HL7 Specification &
Implementation
Guide for Data
Exchange with
MCIR**

December 2024



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Table 1: Version History

Version	Date	Notes
1	December 2024	<p>The first iteration of Michigan Local IG using AIRA Local IG Template (AIRA template version 1.0. This document replaces two previous local IG documents:</p> <ul style="list-style-type: none"> • Michigan Care Improvement Registry HL7 2.5.1 v1.5 Specification for Vaccination Messages, last updated September 15, 2023. • Michigan Care Improvement Registry HL7 2.5.1 v1.5 Specification Guide for Query by Parameter (QBP), Version 1.6, last updated August 13, 2019.

Introduction

Purpose

This Local Implementation Guide is designed to serve as a companion to the national [HL7 Version 2.5.1 Implementation Guide for Immunization Messaging, Release 1.5 and Addendum](#) (National IG) to support electronic immunization data exchange with the Michigan Care Improvement Registry (IIS), MCIR. **This Local IG provides key information relevant to messaging with the IIS. Jurisdictional information includes:**

- Laws and policies relevant to data exchange
- Supported message types, profiles, and functions
- Transitions in usage specifications for VXU and QBP element processing, including the definition of optional elements (see [Appendix A](#) for a review of local usage designations)
- Identifiers for VXU and QBP messaging
- Business rules impacting element processing
- Key details about ACK and RSP messages returned
- Accepted codes and values

This Local IG is intended to serve as a reference for provider organization representatives and electronic health record (EHR)/health IT technical representatives in onboarding, i.e., establishing an electronic data interface with the IIS. It also serves as a reference to support ongoing monitoring and troubleshooting of production data interfaces with the IIS.

About the IIS

[MCIR](#) is an immunization registry that compiles complete immunization histories for children and adults in Michigan. MCIR was created in 1998 to collect reliable immunization information and make it accessible to authorized users online. In 2006, MCIR was expanded to include adults.

MCIR benefits healthcare organizations, schools, licensed childcare programs, and Michigan's citizens by consolidating immunization information from multiple providers. This reduces

vaccine-preventable diseases and over-vaccination and allows providers to see up-to-date patient immunization histories. MCIR can also assist with pandemic flu preparedness and track vaccines and medications during a public health emergency.

MCIR operates as an opt-out IIS. By state law, providers must submit childhood immunizations within 72 hours of administration. In addition, providers are allowed and highly encouraged to report adult vaccinations. Table 1 provides additional notes on these policies.

Table 1. IIS policies and notes relevant to HL7 data exchange

	Policy	Local Notes
Patient Participation	Opt-out	Patient protection cannot be indicated through HL7 messages submitted to MCIR. Hence, the PD1-12 field is not used in VXU messaging to indicate patient consent for IIS participation.
Provider Organization Reporting	<ul style="list-style-type: none">• Mandated reporting for child vaccinations• Reporting is strongly encouraged for adult vaccinations	Providers are required to report child immunizations within 72 hours of administration. Reporting of adult immunizations is strongly encouraged.

Onboarding for data exchange with the IIS

Organizations must complete the onboarding process to establish a data exchange interface with the IIS. For more information about this process, review the MCIR HL7 Onboarding Guide. Also, review the [Jurisdiction Readiness Checklist](#) to ensure your organization is ready for data exchange and onboarding with the IIS.

Contact

Direct questions about HL7 messaging and data exchange to the IIS team at [MDHHS-
HL7@michigan.gov](mailto:MDHHS-
HL7@michigan.gov)

Supported Message Types/Profiles and Functions

Specific messaging types and profiles supported by the IIS are detailed in Tables 2 and 3.

Table 2. Messages *accepted* by the IIS in data exchange with provider organizations

Message Type	Message Profile	Description	IIS Accepted?	Local Notes
VXU	Z22	Add: "A" in RXA-21 and Update: "U" in RXA-21	Yes	Note: "U" is treated as "A." An immunization record that is reported incorrectly can be updated using "A" and "D," as noted below: <ul style="list-style-type: none"> • First, the incorrect encounter information is sent with an "A" (Add) • Next, after the mistake is corrected locally, the previously submitted incorrect encounter information is sent with a "D" (Delete). • Finally, the correct encounter information is sent with an "A."
		Delete: "D" in RXA-21	Yes	Deletes are only processed for vaccinations initially reported by the same organization.
VXU	Z22	Administered dose(s)	Yes	
VXU	Z22	Partially administered dose(s)	Yes	
VXU	Z22	Historical dose(s)	Yes	
VXU	Z22	Refusal(s)	Yes	
VXU	Z22	Contraindication(s)	No	Not supported.
VXU	Z22	Immunity/immunities (serological evidence of immunity, disease with presumed immunity)	Yes	MCIR accepts disease with presumed immunity.
VXU	Z22	Adverse reaction(s)	No	Not supported.
VXU	Z22	Patient without immunization information: VXU with no RXA	No	Not supported.

QBP	Z34	Request complete immunization history	Yes	Potential IIS responses, depending on processing results, may include: <ul style="list-style-type: none"> • Z32 RSP when a patient match is found. • Z33 RSP when a patient match is not found. • Z23 ACK if the query is poorly formed and cannot be processed.
QBP	Z44	Request evaluated immunization history and forecast	Yes	Potential IIS responses, depending on processing results, may include: <ul style="list-style-type: none"> • Z42 RSP when a patient match is found. • Z33 RSP when a patient match is not found. • Z23 ACK if the query is poorly formed and cannot be processed.

Table 3. Messages returned by the IIS in data exchange with provider organizations

Message Type	Message Profile	Description	IIS Returned?	Local Notes
ACK	Z23	Acknowledgment	Yes	
RSP	Z32, Z42	Complete immunization history	Yes	
		Immunization evaluation and forecast	Yes	The IIS immunization evaluation and forecast are included in response to a Z44 QBP.
		Partially administered dose(s)	Yes	
		Refusal(s)	Yes	
		Contraindication(s)	No	Not supported.
		Immunity/immunities (serological evidence of immunity, disease with presumed immunity)	Yes	MCIR returns disease with presumed immunity.
		Adverse reaction(s)	No	Not supported.
Patient without immunization	No	Not supported.		

		information: VXU with no RXA		
RSP	Z31	Return a message with a candidate list of potential matches	No	The IIS will not return a list of potential patient matches. Instead, it will return RSP profile Z33 indicating ["TM/NF"].
RSP	Z33	Return message indicating a patient match could not be found	Yes	The IIS may return in response to a Z34 and Z44 QBP in the following circumstances: <ul style="list-style-type: none"> • When no potential patient matches are found ("NF"), • When the number of potential matches exceeds the number allowed for return. In this case, the IIS will return ["TM"] • When a match is found, but the record is not allowed to be shared for privacy reasons, the IIS will return ["NF"]. EX: Patient is deceased.

Summary of Notable Jurisdiction-Specific Specifications (Delta Summary)

This section summarizes notable jurisdiction-specific specifications for provider organizations and EHR/health IT technical representatives to be aware of in establishing and maintaining successful interfaces with the IIS. This includes a summary of local IIS usage differences in VXU and QBP message processing and where there are differences and/or noteworthy items related to ACK and RSP messages returned by the IIS.

Key local VXU usage transitions

Tables 4 and 5 highlight segment- and field-level elements with usage transitions from the National IG for VXU messaging. Optional elements in the National IG constrained to be ignored locally (O->IX) are omitted from the summary tables for brevity. See [VXU Messaging](#) for further details related to these fields.

Table 4. Segment-level usage transitions from the National IG for VXU messaging

Segment/Group	Nat'l Usage	Local Usage
Order Group	RE	R

Table 5. Field-level usage transitions from the National IG for VXU messaging

Seq	Element Name	Nat'l Usage	Local Usage
MSH-3	Sending Application	RE	IX
MSH-4	Sending Facility	RE	R
MSH-5	Receiving Application	RE	R
MSH-6	Receiving Facility	RE	R
MSH-15	Accept Acknowledgement Type	R	IX
MSH-16	Application Acknowledgment Type	R	IX
MSH-22	Sending Responsible Organization	RE	IX
MSH-23	Receiving Responsible Organization	RE	IX
PID-10	Race	RE	R
PID-22	Ethnic Group	RE	R
PID-24	Multiple Birth Indicator	RE	IX
PID-25	Birth Order	C(RE/O)	IX
PID-29	Patient Death Date and Time	C(RE/X)	C(RE/X)
PID-30	Patient Death Indicator	RE	IX
PD1-11	Publicity Code	RE	IX
PD1-12	Protection Indicator	RE	IX
PD1-13	Protection Indicator Effective Date	C(RE/X)	IX
PD1-16	Immunization Registry Status	RE	IX
PD1-17	Immunization Registry Status Effective Date	C(RE/X)	IX
PD1-18	Publicity Code Effective Date	C(RE/X)	IX
NK1-2	Name	R	C(R/IX) R when NK1-3 is present and the patient is up to 18 years of age; otherwise, IX.
NK1-3	Relationship	R	RE
ORC-3	Filler Order Number	R	RE
ORC-10	Entered By	RE	IX
ORC-12	Ordering Provider	C(RE/O)	IX
ORC-17	Entering Organization	RE	IX
RXA-2	Administration Sub-ID Counter	R	IX
RXA-6	Administered Amount	R	RE
RXA-7	Administered Units	C(R/X)	RE
RXA-9	Administration notes	C(R/O)	C(RE/IX) RE when RXA-20 is CP or PA; otherwise, IX
RXA-11	Administered-at Location	C(RE/O)	IX

RXA-15	Substance Lot Number	C(R/O)	C(RE/IX) R when admin and RE historical; otherwise, IX
RXA-16	Substance Expiration Date	C(RE/O)	RE
RXA-17	Substance Manufacturer Name	C(R/O)	C(RE/IX) RE when admin and historical; otherwise, IX
RXA-21	Action Code - RXA	C(R/O)	C(RE/IX) RE when admin and historical; otherwise, IX
RXR-1	Route	R	RE
OBX-4	Observation Sub-ID	R	IX
OBX-6	Units	C(R/O)	IX
OBX-14	Date/Time of the Observation	RE	IX
OBX-17	Observation Method	C(RE/O)	IX

Key local QBP usage transitions

Tables 6, 7, and 8 highlight segment- and field-level elements with usage transitions from the National IG for QBP messaging. Optional elements in the National IG constrained to be ignored locally (O->IX) are omitted from the summary tables for brevity. See [QBP Messaging](#) for further details related to these fields.

Table 6. Segment-level usage transitions from the National IG for QBP messaging

Segment/Group	Nat'l Usage	Local Usage
None		

Table 7. Field-level usage transitions from the National IG for Z34 QBP messaging, request complete immunization history

Seq	Element Name	Nat'l Usage	Local Usage
MSH-3	Sending Application	RE	R
MSH-4	Sending Facility	RE	R
MSH-5	Receiving Application	RE	R
MSH-6	Receiving Facility	RE	R
QPD-4	Patient Name	RE	R
QPD-6	Patient Date of Birth	RE	R

Table 8. Field-level usage transitions from the National IG for Z44 QBP messaging; request evaluated immunization history, and forecast

Seq	Element Name	Nat'l Usage	Local Usage
MSH-3	Sending Application	RE	R
MSH-4	Sending Facility	RE	R
MSH-5	Receiving Application	RE	R
MSH-6	Receiving Facility	RE	R
QPD-4	Patient Name	RE	R
QPD-6	Patient Date of Birth	RE	R

Key local ACK specifications

See [ACK Messaging](#) for further details on the interpretation of ACK messages.

- The ACK message does not meet NIST standards. Some of the errors include:
 - The required Field MSH-15 (Accept Acknowledgement Type) is missing
 - The required Field MSH-16 (Application Acknowledgement Type) is missing
 - The required Field MSH-21 (Message Profile Identifier) is missing

Key local RSP specifications

See [RSP Messaging](#) for further details on the interpretation of RSP messages. In addition, see Table 3 for a review of RSP message types returned by the IIS.

Summary of Identifiers for VXU and QBP Messaging

The table below summarizes the identifiers used in VXU and QBP message submissions to the IIS. Work with the IIS team to obtain appropriate jurisdiction-specified identifiers. See [VXU Messaging](#) and [QBP Messaging](#) for additional details related to these fields.

Table 9. Identifiers used in VXU and QBP messaging

Message Type	Seq	Element Name	Local Usage	Supplier of the Identifier
VXU	MSH-3	Sending Application	IX	N/A
QBP	MSH-3	Sending Application	R	MCIR Staff
VXU, QBP	MSH-4	Sending Facility	R	MCIR Staff
VXU, QBP	MSH-5	Receiving Application	R	MCIR Staff
VXU, QBP	MSH-6	Receiving Facility	R	MCIR Staff
VXU, QBP	MSH-22	Sending Responsible Organization	IX	N/A
VXU	PID-3	Patient Identifier List	R	Submitter
QBP	QPD-3	Patient Identifier List	RE	Submitter
VXU	ORC-3	Filler Order Number	RE	Submitter
VXU	ORC-12	Ordering Provider	IX	N/A
VXU	ORC-17	Entering Organization	IX	N/A
VXU	RXA-10	Administering Provider	C(RE/IX)	Submitter
VXU	RXA-11	Administered-at Location	IX	Submitter

VXU Messaging: Z22 Profile

Use the following specifications to support VXU messaging with the IIS. Specifications are for the Z22 profile. Send an unsolicited immunization update.

Local VXU segment specifications

Table 10 details segment-level specifications for VXU messaging. Local usage is only noted where it is different from the National IG. Where local usage is blank, local usage is the same as the National IG. Elements indicated with a local usage of “IX” are ignored by the IIS.

Table 10. Local VXU segment specifications¹

Segment	Nat'l Cardinality	Nat'l Usage	Nat'l Conformance Notes	Local Usage Change	Local Conformance Notes
MSH – Message Header Segment	[1..1]	R	Every message begins with an MSH		
SFT – Software Segment	[0..*]	O		IX	
PID – Patient Identifier Segment	[1..1]	R	Every VXU has one PID segment		
PD1 – Patient Demographic Segment	[0..1]	RE	Every PID segment in VXU may have one or less PD1 segment		
NK1 – Next of Kin	[0..*]	RE	The PID segment in a VXU may have zero or more NK1 segments		The IIS will process up to two NK1 segments and store up to two next-of-kin records for each patient.
Begin patient visit group	[0..1]	O		IX	
PV1 – Patient Visit	[1..1]	R		IX	
PV2 – Patient Visit Additional Information	[0..1]	O		IX	
End patient visit group.					

¹ Derived from Table 5-1, VXU Segment Usage, in the National IG.

Begin insurance group	[0..1]	O	May not repeat	IX	
IN1 – Insurance Segment	[1..1]	R		IX	
IN2 – Insurance Additional Information	[0..1]	O		IX	
IN3 – Insurance Additional Information Certification	[0..1]	O		IX	
End insurance group					
Begin order group	[0..*]	RE	Each VXU may have zero or more order groups	R	
ORC – Order Request Segment	[1..1]	R	The order group in a VXU must have one ORC segment		
RXA – Pharmacy/Treatment Administration	[1..1]	R	Each ORC segment in a VXU must have one RXA segment. Every RXA requires an ORC segment		
RXR – Pharmacy/Treatment Route	[0..1]	RE	Every RXA segment in a VXU may have zero or one RXR segments		
Begin observation group	[0..*]	RE	Every RXA segment in a VXU may have zero or more observation groups		
OBX – Observation Segment	[0..1]	R			
NTE – Note Segment	[0..1]	O	Every OBX segment in a VXU may have zero or one NTE segment	IX	
End observation group					
End order group					

Local VXU field specifications by segment

The following tables detail field-level specifications for VXU messaging, presented by segment. Local usage is only noted where it is different from the National IG. Where local usage is blank, local usage is the same as the National IG. Elements indicated with a local usage of “IX” are ignored by the IIS.

MSH – Message Header Segment

Table 11. Local MSH field-level specifications for VXU messaging²

Seq	Element Name	Nat'l Cardinality	Nat'l Usage	Nat'l Conformance Notes	Local Usage Change	Local Conformance Notes
MSH-1	Field Separator	[1..1]	R	Shall be valued “ ”		
MSH-2	Encoding Characters	[1..1]	R	Shall be valued “^~\&”		
MSH-3	Sending Application	[0..1]	RE	See HL70361	IX	
MSH-4	Sending Facility	[0..1]	RE	See HL70362	R	Assigned by MCIR as part of the onboarding process. Shall be in the format of “#####-##-##”
MSH-5	Receiving Application	[0..1]	RE	See HL70361	R	Shall be “MCIR”
MSH-6	Receiving Facility	[0..1]	RE	See HL70362	R	Shall be “MDCH”
MSH-7	Date/Time of Message	[1..1]	R			
MSH-8	Security	[0..1]	O		IX	
MSH-9	Message Type	[1..1]	R	Shall contain the constant value “VXU^V04^VXU_V04”		
MSH-10	Message Control ID	[1..1]	R			
MSH-11	Processing ID	[1..1]	R			
MSH-12	Version ID	[1..1]	R	Shall be valued “2.5.1”		

² Derived from Table 5-4, Message Header Segment, and accompanying notes in the National IG.

MSH-13	Sequence Number	[0..1]	O		IX	
MSH-14	Continuation Pointer	[0..1]	O		IX	
MSH-15	Accept Acknowledgment Type	[1..1]	R	Shall be "ER"	IX	
MSH-16	Application Acknowledgment Type	[1..1]	R	Shall be "AL"	IX	
MSH-17	Country Code	[0..1]	O		IX	
MSH-18	Character Set	[0..1]	O		IX	
MSH-19	Principal Language of Message	[0..1]	O		IX	
MSH-20	Alternate Character Set Handling Scheme	[0..1]	O		IX	
MSH-21	Message Profile Identifier	[1..*]	R	One occurrence shall contain the constant value "Z22^CDCPHINVS"		
MSH-22	Sending Responsible Organization	[0..1]	RE		IX	
MSH-23	Receiving Responsible Organization	[0..1]	RE		IX	

VXU MSH notes

- MSH-4: Sending Facility
 - Contact MCIR for details and to be assigned a facility ID for this field. The value assigned by MCIR for your submitting system MUST be used for all messages sent.
- MSH-7: Date/Time of Message:
 - The degree of precision must be at least to the second, including the time zone. Format Example: YYYYMMDDHHMMSS+ZZZZ.
- MSH-11: Processing ID
 - Messages sent without a "P" or a "T" in the first component (MSH-11.1) will be rejected.
- MSH-12: Version ID
 - The MCIR interface is currently at 2.5.1 and is backward compatible with earlier versions. Please indicate the version used to construct this message here.

VXU MSH example

MSH|^~\&||1234-56-78|MCIR|MDCH|20140225161706-0500||VXU^V04^VXU_V04|200399.6371|P|2.5.1|

PID – Patient Identifier Segment

Table 12. Local PID field-level specifications for VXU messaging³

Seq	Element Name	Nat'l Cardinality	Nat'l Usage	Nat'l Conformance Notes	Local Usage Change	Local Conformance Notes
PID-1	Set ID - PID	[1..1]	R	Shall contain the value "1"		
PID-3	Patient Identifier List	[1..*]	R			See locally accepted values for identifier type in User-defined Table 0203 – Identifier Type (patient), Appendix B .
PID-5	Patient Name	[1..*]	R	Shall contain the legal name (name type code "L") in the first repetition		After the legal name ("L"), additional patient name types accepted include Alias name ("A") and Maiden name ("M").
PID-6	Mother's Maiden Name	[0..1]	RE			
PID-7	Date/Time of Birth	[1..1]	R			
PID-8	Administrative Sex	[1..1]	R			See locally accepted values in User-defined Table 0001 – Administrative Sex, Appendix B .
PID-10	Race	[0..*]	RE		R	
PID-11	Patient Address	[0..*]	RE	If populated, shall contain the primary address in the first repetition		

³ Derived from Table 5-11, Patient Identifier Segment, and accompanying notes in the National IG.

PID-13	Phone Number - Home	[0..*]	RE			
PID-14	Phone Number - Business	[0..*]	O		IX	
PID-15	Primary Language	[0..1]	O		IX	
PID-16	Marital Status	[0..1]	O		IX	
PID-17	Religion	[0..1]	O		IX	
PID-18	Patient Account Number	[0..1]	O		IX	
PID-22	Ethnic Group	[0..1]	RE		R	
PID-23	Birth Place		O		IX	
PID-24	Multiple Birth Indicator	[0..1]	RE		IX	
PID-25	Birth Order	[0..1]	C(RE/O)	If PID-24 is valued "Y," then RE; otherwise, O	IX	
PID-26	Citizenship	[0..*]	O		IX	
PID-27	Veterans Military Status	[0..1]	O		IX	
PID-28	Nationality	[0..1]	O		IX	
PID-29	Patient Death Date and Time	[0..1]	C(RE/X)	If PID-30 is valued "Y," then R; otherwise, X		
PID-30	Patient Death Indicator	[0..1]	RE	See HL70136	IX	
PID-31	Identity Unknown Indicator	[0..1]	O		IX	
PID-32	Identity Reliability Code	[0..*]	O		IX	
PID-33	Last Update Date/Time	[0..1]	O		IX	
PID-34	Last Update Facility	[0..1]	O		IX	

PID-35	Species Code	[0..1]	O		IX	
PID-36	Breed Code	[0..1]	O		IX	
PID-37	Strain	[0..1]	O		IX	
PID-38	Production Class Code	[0..2]	O		IX	
PID-39	Tribal Citizenship	[0..*]	O		IX	

VXU PID notes

- PID-3: Patient Identifier List
 - MR (Medical Record Number) is the preferred code in PID-3.5.
 - Social Security Number is not accepted.
 - MCIR will also accept the MCIR ID, Medicaid number, and WIC number in PID-3.5. If more than one ID is sent, MCIR will look for IDs identified as such: MR, PR, PI, MA, and WC.
- 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 message will be rejected if the first and last name are missing.
 - If the patient Alias name is sent, it must be documented after the legal name in PID-5 and should be given a name type code of A.
- PID-7: Date/Time of Birth
 - This field must be -
 - a valid date
 - on or before the date of submission (recorded in MSH-7)
 - on or before today
 - on or before the indicated death date
 - Format: YYYYMDDD. The date may contain additional time information, but this will be ignored.
- PID-11: Patient Address
 - Messages that do not indicate an address segment will be rejected.
 - If the address indicates a state other than Michigan, any Canadian province, or any country other than the USA, it is not required to have a street, city, state/province, or ZIP postal code. Otherwise, the address is assumed to be in Michigan and must indicate a street, city, state, and ZIP.
 - All addresses without an indicated country will be assumed to be the USA.
- PID-13: Phone Number
 - Format for phone number: ^PRN^PH^^^734^6777777

VXU PID example

PID|1||S24C757^^^EHR^MR||Short^Aldo^Tovi^^^L|Juniata^Gala|20130821|M||2028-9^Asian|96 Rodriguez
 PI^^Hadley^MI^48440^USA^P|^PRN^PH^^^810^6383109|||||||2186-5^Not Hispanic or Latino|||||||

PD1 – Patient Demographic Segment

Table 13. Local PD1 field-level specifications for VXU messaging⁴

Seq	Element Name	Nat'l Cardinality	Nat'l Usage	Nat'l Conformance Notes	Local Usage Change	Local Conformance Notes
PD1-1	Living Dependency	[0..*]	O		IX	
PD1-2	Living Arrangement	[0..1]	O		IX	
PD1-3	Patient Primary Facility	[0..0]	O		IX	
PD1-5	Student Indicator	[0..1]	O		IX	
PD1-6	Handicap	[0..1]	O		IX	
PD1-7	Living Will Code	[0..1]	O		IX	
PD1-8	Organ Donor Code	[0..1]	O		IX	
PD1-9	Separate Bill	[0..1]	O		IX	
PD1-10	Duplicate Patient	[0..*]	O		IX	
PD1-11	Publicity Code	[0..1]	RE	See HL70215	IX	
PD1-12	Protection Indicator	[0..1]	RE	See HL70136	IX	
PD1-13	Protection Indicator Effective Date	[0..1]	C(RE/X)	If PD1-12 is valued then RE; otherwise, X	IX	
PD1-14	Place of Worship	[0..*]	O		IX	

⁴ Derived from Table 5-10, Patient Demographic Segment, and accompanying notes in the National IG.

PD1-15	Advance Directive Code	[0..*]	O		IX	
PD1-16	Immunization Registry Status	[0..1]	RE		IX	
PD1-17	Immunization Registry Status Effective Date	[0..1]	C(RE/X)	If the PD1-16 field is valued then RE; otherwise, X	IX	
PD1-18	Publicity Code Effective Date	[0..1]	C(RE/X)	If the PD1-11 field is valued then RE; otherwise, X	IX	
PD1-19	Military Branch	[0..1]	O		IX	
PD1-20	Military Rank/Grade	[0..1]	O		IX	
PD1-21	Military Status	[0..1]	O		IX	

NK1 – Next of Kin Segment

Table 14. Local NK1 field-level specifications for VXU messaging⁵

Seq	Element Name	Nat'l Cardinality	Nat'l Usage	Nat'l Conformance Notes	Local Usage Change	Local Conformance Notes
NK1-1	Set ID - NK1	[1..1]	R			
NK1-2	Name	[1..*]	R		C(R/IX) R when NK1-3 is present, and patient is up to 18 years of age; otherwise, IX	
NK1-3	Relationship	[1..1]	R		RE	

⁵ Derived from Table 5-5, Next of Kin Segment, and accompanying notes in the National IG.

NK1-4	Address	[0..*]	RE		C(RE/IX) RE when PID-11 is null; otherwise, IX	
NK1-5	Phone Number	[0..*]	RE		C(RE/IX) RE when PID -13 is null; otherwise, IX	
NK1-6	Business Phone Number	[0..1]	O		IX	
NK1-7	Contact Role	[0..1]	O		IX	
NK1-8	Start Date	[0..1]	O		IX	
NK1-9	End Date	[0..1]	O		IX	
NK1-10	Next of Kin / Associated Parties Job Title	[0..1]	O		IX	
NK1-11	Next of Kin / Associated Parties Job Code/Class	[0..1]	O	See HL70327	IX	
NK1-12	Next of Kin / Associated Parties Employee Number	[0..1]	O		IX	
NK1-13	Organization Name - NK1	[0..*]	O		IX	
NK1-14	Marital Status	[0..1]	O		IX	
NK1-15	Administrative Sex	[0..1]	O		IX	
NK1-16	Date/Time of Birth	[0..1]	O		IX	
NK1-17	Living Dependency	[0..*]	O		IX	
NK1-18	Ambulatory Status	[0..*]	O		IX	
NK1-19	Citizenship	[0..*]	O		IX	

NK1-20	Primary Language	[0..1]	O		IX	
NK1-21	Living Arrangement	[0..1]	O		IX	
NK1-22	Publicity Code	[0..1]	O		IX	
NK1-23	Protection Indicator	[0..1]	O		IX	
NK1-24	Student Indicator	[0..1]	O		IX	
NK1-25	Religion	[0..1]	O		IX	
NK1-26	Mother's Maiden Name	[0..*]	O		IX	
NK1-27	Nationality	[0..1]	O		IX	
NK1-28	Ethnic Group	[0..*]	O		IX	
NK1-29	Contact Reason	[0..*]	O		IX	
NK1-30	Contact Person's Name	[0..*]	O		IX	
NK1-31	Contact Person's Telephone Number	[0..*]	O		IX	
NK1-32	Contact Person's Address	[0..*]	O		IX	
NK1-33	Next of Kin/ Associated Party's Identifiers	[0..*]	O		IX	
NK1-34	Job Status	[0..1]	O		IX	
NK1-35	Race	[0..*]	O		IX	
NK1-36	Handicap	[0..1]	O		IX	
NK1-37	Contact Person Social Security Number	[0..1]	O		IX	
NK1-38	Next of Kin Birth Place	[0..1]	O		IX	
NK1-39	VIP Indicator	[0..1]	O		IX	

VXU NK1 notes

- NK1-3: Relationship
 - Only relationships that indicate a "responsible party" are accepted (guardian, mother, father, parent, or self); all others are ignored.
 - For patients up to 18 years of age, at least one NK1 message must have a recognized relationship. If this field is left empty or incomplete, a warning in the acknowledgment message will be returned.
- NK1-4: Address
 - If no address is provided in the PID segment, MCIR will use the NK1 address of a responsible NK1 relationship. If there is a PID address, then this NK1-4 will be ignored.
- NK1-5: Phone Number
 - MCIR will use NK1 phone number of a responsible NK1 relationship. If a phone number is provided in the PID segment, then this NK1-5 will be ignored.

VXU NK1 example

NK1|1|Short^Gala|GRD^Guardian^HL70063|

ORC – Order Request Segment

Table 15. Local ORC field-level specifications for VXU messaging⁶

Seq	Element Name	Nat'l Cardinality	Nat'l Usage	Nat'l Conformance Notes	Local Usage Change	Local Conformance Notes
ORC-1	Order Control	[1..1]	R	Shall contain the value "RE"		
ORC-2	Placer Order Number	[0..1]	RE		IX	
ORC-3	Filler Order Number	[1..1]	R	If RXA-20 is valued "NA" or "RE" then ORC-3.1 SHALL be valued "9999"	RE	
ORC-4	Placer Group Number	[0..1]	O		IX	
ORC-5	Order Status	[0..1]	O		IX	
ORC-6	Response Flag	[0..1]	O		IX	
ORC-8	Parent	[0..1]	O		IX	
ORC-9	Date/Time of Transaction	[0..1]	O		IX	

⁶ Derived from Table 5-9, Common Order Segment, and accompanying notes in the National IG.

ORC-10	Entered By	[0..1]	RE		IX	
ORC-11	Verified By	[0..*]	O		IX	
ORC-12	Ordering Provider	[0..1]	C(RE/O)	If the first occurrence of RXA-9.1 is valued "00" and RXA-20 is valued "CP" or "PA" then RE; otherwise, O	IX	
ORC-13	Enterer's Location	[0..1]	O		IX	
ORC-14	Call Back Phone Number	[0..2]	O		IX	
ORC-15	Order Effective Date/Time	[0..1]	O		IX	
ORC-16	Order Control Code Reason	[0..1]	O		IX	
ORC-17	Entering Organization	[0..1]	RE		IX	
ORC-18	Entering Device	[0..1]	O		IX	
ORC-19	Action By	[0..*]	O		IX	
ORC-20	Advanced Beneficiary Notice Code	[0..1]	O		IX	
ORC-21	Ordering Facility Name	[0..*]	O		IX	
ORC-22	Ordering Facility Address	[0..*]	O		IX	
ORC-23	Ordering Facility Phone Number	[0..*]	O		IX	
ORC-24	Ordering Provider Address	[0..*]	O		IX	
ORC-25	Order Status Modifier	[0..1]	O		IX	
ORC-26	Advanced Beneficiary Notice Override Reason	[0..1]	O		IX	

ORC-27	Filler's Expected Availability Date/Time	[0..1]	O		IX	
ORC-28	Confidentiality Code	[0..1]	O		IX	
ORC-29	Order Type	[0..1]	O		IX	
ORC-30	Enterer Authorization Mode	[0..1]	O		IX	
ORC-31	Parent Universal Service Identifier	[0..1]	O		IX	

VXU ORC example

Example 1: administered immunization

ORC|RE||S24C757.1^OIS|||||I-23432^Burden^Donna^A^^^^NIST-AA-1||57422^RADON^NICHOLAS^^^^NIST-AA-1^L|

Example 2: historical immunization

ORC|RE||1|

Example 3: refusal/religious exemption:

ORC|RE||9999|

RXA – Pharmacy/Treatment Administration Segment

The RXA segment may be used to convey information about administered immunizations, historical immunizations, patient refusals, and vaccine contraindications and indicate when there is a patient-level observation. Field-level usage specifications within the RXA segment often vary depending on what information is being conveyed, with RXA-5 (administered code), RXA-9 (administration notes), and RXA-20 (completion status) as key indicators.

The variation in how the RXA may be used results in numerous conditional usage designations and conditional predicates, as noted in the National IG. The conditional usage specifications were flattened to clarify RXA field-level usage specifications (i.e., conditionals were removed).

The tables below present specifications for using the RXA to message the following:

- Administered Immunization ([Table 16](#))
- Historical Immunization ([Table 18](#))
- No Vaccination: Refusal ([Table 20](#))
- No Vaccination: Specific Vaccine Contraindication ([Table 22](#))
- No Vaccination: Patient-Level Observation ([Table 24](#))

RXA – Pharmacy/Treatment Administration Segment – **Administered Immunization**

Note: The RXA field-level usage specifications have been flattened (conditional usage removed); the specifications below are for submission of administered immunizations, i.e., a dose administered by the organization reporting this dose.

Table 16. Local RXA field-level specifications for an *administered immunization* in VXU messaging⁷

	Seq	Element Name	Nat'l Cardinality	Nat'l Usage	Nat'l Conformance Notes	Local Usage Change	Local Conformance Notes
ADMINISTERED IMMUNIZATION	RXA-1	Give Sub-ID Counter	[1..1]	R	Shall be "0"		
	RXA-2	Administration Sub-ID Counter	[1..1]	R	Shall be "1"	IX	
	RXA-3	Date/Time Start of Administration	[1..1]	R		R	
	RXA-4	Date/Time End of Administration	[0..1]	O		IX	
	RXA-5	Administered Code	[1..1]	R	Shall contain CVX and/or NDC		CVX code is required. The IIS will accept an NDC with 11 digits, with and without hyphens, and 10 digits with and without hyphens.
	RXA-6	Administered Amount	[1..1]	R		RE	If missing or incomplete, a warning in the acknowledgement message will be returned.
	RXA-7	Administered Units	[0..1]	R		RE	Should indicate ml or cc.

⁷ Derived from Table 5-12, Pharmacy/Treatment Administration, and accompanying notes in the National IG.

ADMINISTERED IMMUNIZATION	RXA-8	Administered Dosage Form		O		IX	
	RXA-9	Administration Notes	[1..*]	R	Shall contain "00" for an administered vaccine	C(RE/IX) RE when RXA-20 is CP or PA; otherwise, IX	
	RXA-10	Administering Provider	[0..1]	RE	If populated, it shall indicate the name and provider ID of the person physically administering the immunization		See locally accepted values for identifier type in User-defined Table 0203 – Identifier Type (administering provider), Appendix B .
	RXA-11	Administered-at Location	[0..1]	RE	If populated, it shall indicate the name and address of the facility that administered the immunization	IX	
	RXA-12	Administered Per (Time Unit)	[0..1]	O		IX	
	RXA-13	Administered Strength	[0..1]	O		IX	
	RXA-14	Administered Strength Units	[0..1]	O		IX	
	RXA-15	Substance Lot Number	[0..*]	R		RE	
	RXA-16	Substance Expiration Date	[0..1]	RE			

ADMINISTERED IMMUNIZATION	RXA-17	Substance Manufacturer Name	[0..1]	R	See MVX	RE	
	RXA-18	Substance/Treatment Refusal Reason	[0..0]	X			
	RXA-19	Indication	[0..*]	O		IX	
	RXA-20	Completion Status	[0..1]	RE	Shall be "CP" or "PA"		Values are specific to administered shots.
	RXA-21	Action Code - RXA	[1..1]	R		RE	
	RXA-22	System Entry Date/Time	[0..1]	O		IX	
	RXA-23	Administered Drug Strength Volume	[0..1]	O		IX	
	RXA-24	Administered Drug Strength Volume	[0..1]	O		IX	
	RXA-25	Administered Barcode Identifier	[0..1]	O		IX	
	RXA-26	Pharmacy Order Type	[0..1]	O		IX	

VXU RXA notes – administered immunization

- RXA-6: Administered Amount
 - MCIR will indicate a warning in the acknowledgment message returned when this field is missing or incomplete.
- RXA-20: Completion Status
 - If this field is not populated, it is assumed to be CP or complete.
- RXA-21: Action Code
 - The default value is "A".
 - "U" is treated as "A". An immunization record that is reported incorrectly can be updated appropriately.
 - First, the incorrect encounter information is sent with an "A" (Add)
 - Next, after the mistake is corrected locally, the previously submitted incorrect encounter information is sent with a "D" (Delete).
 - Finally, the correct encounter information is sent with an "A".

- An RXA for an *administered immunization* should be followed by an RXR segment and OBX segment(s) to report additional details about the immunization. See [Table 17](#) for a list of LOINC that may be used in a corresponding OBX for administered immunization.

VXU RXA example – administered immunization

RXA|0|1|20131021||48^Hib-PRP-T^CVX^49281-0545-05^^NDC|0.5|mL^Milliliters^UCUM
 ||00^New Immunization ^NIP001|||||R8370VT|20240630|PMC^sanofipasteur^MVX||||A|

LOINC accepted in a corresponding OBX segment – administered immunization

- LOINC is used in the OBX to message additional information. See Table 17 for a list of LOINC used by the IIS in processing information related to *administered immunizations* in VXU messages.

Table 17. LOINC accepted in a corresponding OBX for administered immunization in VXU messaging

	Description	LOINC for Use in OBX-3	Corresponding OBX-5 Value Set	OBX-5 Value Saved/ Stored by IIS	Local Notes for Administered Immunizations
ADMINISTERED IMMUNIZATION	<i>Dose-level Accountability/Vaccine Inventory Management*</i>				
	Vaccine funding program eligibility category	64994-7	See User-defined Table 0064	Yes	
	Vaccine funding source	30963-3	See PHVS_ImmunizationFundingSource_IIS	Yes	
	<i>VIS-Related, Method 1**</i>				
	Document type (vaccine information statement)	69764-9	See cdcgs1vis	Yes	
	Date vaccine information statement presented	29769-7	N/A	Yes	
	<i>VIS-Related, Method 2**</i>				
	Vaccine type identifier (vaccine	30956-7	See CVX	Yes	

ADMINISTERED IMMUNIZATION	group or family)				
	Date vaccine information statement published	29768-9	N/A	Yes	
	Date vaccine information statement presented	29769-7	N/A	Yes	
	Other				
	Immunization reaction	31044-1	See PHVS_VaccinationReaction_IIS	No	
	Indication for immunization	59785-6	See PHVS_VaccinationSpecialIndications_IIS	No	
	Indication effective date	88877-6	N/A	No	
	Indication expiration date	88879-2	N/A	No	

**Per the National IG, the vaccine funding program eligibility category shall be messaged in an OBX for reporting an administered immunization.⁸ Per AIRA guidance, vaccine funding sources should be messaged in an OBX for a report of an administered immunization.⁹

**Per the National IG, VIS information shall be messaged in an OBX for the report of an administered immunization.¹⁰

The National IG indicates two methods for reporting VIS information to an IIS:

- 1) Two corresponding OBX segments, each with the same value in OBX-4: One OBX segment with OBX-3.1 valued "69764-9" (bar coded) and one OBX with OBX-3.1 valued "29769-7" (presentation/delivery date) associated.
- 2) Three corresponding OBX segments, all with the same value in OBX-4: One OBX segment with OBX-3.1 valued "30956-7" (vaccine type) and one OBX segment with OBX-3.1 valued "29768-9" (version date) and one OBX with OBX-3.1 valued "29769-7" (presentation/delivery date) associated.

⁸ See conformance statement IZ-23 in the National IG.

⁹ See [Guidance on Detailed Message Structure and the Use of Specific LOINC Codes](#), AIRA

¹⁰ See conformance statement IZ-24 in the National IG.

RXA – Pharmacy/Treatment Administration Segment – **Historical Immunization**

Note: RXA field-level usage specifications have been flattened (conditional usage removed); the RXA field-level specifications below are specific to submission of historical immunizations, i.e., a record of a vaccine dose from another source.

Table 18. Local RXA field-level specifications for a *historical immunization* in VXU messaging¹¹

	Seq	Element Name	Nat'l Cardinality	Nat'l Usage	Nat'l Conformance Notes	Local Usage Change	Local Conformance Notes
HISTORICAL IMMUNIZATION	RXA-1	Give Sub-ID Counter	[1..1]	R	Shall be "0"		
	RXA-2	Administration Sub-ID Counter	[1..1]	R	Shall be "1"	IX	
	RXA-3	Date/Time Start of Administration	[1..1]	R			
	RXA-4	Date/Time End of Administration	[0..1]	O		IX	
	RXA-5	Administered Code	[1..1]	R	Shall contain CVX		
	RXA-6	Administered Amount	[1..1]	R	Shall be "999" when unknown	IX	
	RXA-7	Administered Units	[0..1]	X		IX	
	RXA-8	Administered Dosage Form	[0..1]	O		IX	
	RXA-9	Administration Notes	[1..*]	R	Shall contain "01" – "08" (from NIP001); shall not be valued "00"	RE	

¹¹ Derived from Table 5-12, Pharmacy/Treatment Administration, and accompanying notes in the National IG.

HISTORICAL IMMUNIZATION	RXA-10	Administering Provider	[0..1]	O		IX	
	RXA-11	Administered-at Location	[0..1]	O		IX	
	RXA-12	Administered Per (Time Unit)	[0..1]	O		IX	
	RXA-13	Administered Strength	[0..1]	O		IX	
	RXA-14	Administered Strength Units	[0..1]	O		IX	
	RXA-15	Substance Lot Number	[0..*]	O		RE	
	RXA-16	Substance Expiration Date	[0..1]	O		IX	
	RXA-17	Substance Manufacturer Name	[0..1]	O	See MVX	RE	
	RXA-18	Substance/Treatment Refusal Reason	[0..0]	X			
	RXA-19	Indication	[0..*]	O		IX	
	RXA-20	Completion Status	[0..1]	RE	Shall be "CP" or "PA"		
	RXA-21	Action Code - RXA	[1..1]	R		RE	
	RXA-22	System Entry Date/Time	[0..1]	O		IX	
	RXA-23	Administered Drug Strength Volume	[0..1]	O		IX	
RXA-24	Administered Drug Strength Volume	[0..1]	O		IX		

	RXA-25	Administered Barcode Identifier	[0..1]	O		IX	
	RXA-26	Pharmacy Order Type	[0..1]	O		IX	

VXU RXA notes – historical immunization

- RXA-20: Completion Status
 - If this field is not populated, it is assumed to be CP or complete.
- RXA-21: Action Code
 - The default value is “A”.
 - “U” is treated as “A”. An immunization record that is reported incorrectly can be updated appropriately:
 - First, the incorrect encounter information is sent with an “A” (Add)
 - Next, after the mistake is corrected locally, the previously submitted incorrect encounter information is sent with a “D” (Delete).
 - Finally, the correct encounter information is sent with an “A”.
 - An RXA for a historical immunization should be followed by an RXR segment and OBX segment(s) if additional details are known about the immunization. See [Table 19](#) for a list of LOINC that may be used in a corresponding OBX for historical immunization.

VXU RXA example – historical immunization

RXA|0|1|20110219||118^HPV, bivalent^CVX|999|||01^Historical information - source unspecified^NIP001|||||||NA|A

LOINC accepted in a corresponding OBX segment – historical immunization

- LOINC is used in the OBX to message additional information. See Table 19 for a list of LOINC used by the IIS to process information related to VXU messages' *historical immunizations*.

Table 19. LOINC accepted in a corresponding OBX for *historical immunization* in VXU messaging

	Description	LOINC for Use in OBX-3	Corresponding OBX-5 Value Set	OBX-5 Value Saved/stored by IIS?	Local Notes for Historical Immunizations
	<i>Dose-level Accountability/Vaccine Inventory Management*</i>				
	Vaccine funding program	64994-7	See User-defined Table 0064	Yes	

HISTORICAL IMMUNIZATION	eligibility category				
	Vaccine funding source	30963-3	See PHVS_ImmunizationFundingSource_IIS	Yes	
	<i>VIS-Related, Method 1**</i>				
	Document type (vaccine information statement)	69764-9	See cdcgs1vis	Yes	
	Date vaccine information statement presented	29769-7	N/A	Yes	
	<i>VIS-Related, Method 2**</i>				
	Vaccine type identifier (vaccine group or family)	30956-7	See CVX	Yes	
	Date vaccine information statement published	29768-9	N/A	Yes	
	Date vaccine information statement presented	29769-7	N/A	Yes	
	<i>Other</i>				
	Immunization reaction	31044-1	See PHVS_VaccinationReaction_IIS	No	
	Indication for immunization	59785-6	See PHVS_VaccinationSpecialIndications_IIS	No	

	Indication effective date	88877-6	N/A	No	
	Indication expiration date	88879-2	N/A	No	

**Per the National IG, the vaccine funding program eligibility category shall be messaged in an OBX for reporting an administered immunization.¹² Per AIRA guidance, vaccine funding sources should be messaged in an OBX for a report of an administered immunization.¹³

**Per the National IG, VIS information shall be messaged in an OBX for a report of an administered immunization.¹⁴ The National IG indicates two methods for reporting VIS information to an IIS:

- 1) Two corresponding OBX segments, each with the same value in OBX-4: One OBX segment with OBX-3.1 valued “69764-9” (barcoded) and one OBX with OBX-3.1 valued “29769-7” (presentation/delivery date) associated.
- 2) Three corresponding OBX segments, all with the same value in OBX-4: One OBX segment with OBX-3.1 valued “30956-7” (vaccine type) and one OBX segment with OBX-3.1 valued “29768-9” (version date) and one OBX with OBX-3.1 valued “29769-7” (presentation/delivery date) associated.

RXA – Pharmacy/Treatment Administration Segment – **No Vaccination: Refusal**

Note: The RXA field-level usage specifications have been flattened (conditional usage removed); the specifications below are specific to the submission of no vaccination: refusal.

Table 20. Local RXA field-level specifications for *no vaccination: refusal* in VXU messaging¹⁵

	Seq	Element Name	Nat'l Cardinality	Nat'l Usage	Nat'l Conformance Notes	Local Usage Change	Local Conformance Notes
	RXA-1	Give Sub-ID Counter	[1..1]	R	Shall be “0”		
	RXA-2	Administration Sub-ID Counter	[1..1]	R	Shall be “1”		

¹² See conformance statement IZ-23 in the National IG.

¹³ See [Guidance on Detailed Message Structure and the Use of Specific LOINC Codes](#), AIRA

¹⁴ See conformance statement IZ-24 in the National IG.

¹⁵ Derived from Table 5-12, Pharmacy/Treatment Administration, and accompanying notes in the National IG.

NO VACCINATION: REFUSAL	RXA-3	Date/Time Start of Administration	[1..1]	R	Shall indicate date refusal recorded.		
	RXA-4	Date/Time End of Administration	[0..1]	O		IX	
	RXA-5	Administered Code	[1..1]	R	Should contain the unspecified formulation CVX code for the refused vaccine		
	RXA-6	Administered Amount	[1..1]	R	Shall be "999"	IX	
	RXA-7	Administered Units	[0..0]	X			
	RXA-8	Administered Dosage Form	[0..1]	O		IX	
	RXA-9	Administration Notes	[0..*]	O		IX	
	RXA-10	Administering Provider	[0..1]	O		IX	
	RXA-11	Administered-at Location	[0..1]	O		IX	
	RXA-12	Administered Per (Time Unit)	[0..1]	O		IX	
	RXA-13	Administered Strength	[0..1]	O		IX	
	RXA-14	Administered Strength Units	[0..1]	O		IX	
	RXA-15	Substance Lot Number	[0..*]	O		IX	
	RXA-16	Substance Expiration Date	[0..1]	O		IX	
	RXA-17	Substance Manufacturer Name	[0..1]	O	See MVX	IX	

NO VACCINATION: REFUSAL	RXA-18	Substance/ Treatment Refusal Reason	[1..1]	R			See locally accepted values in CDC-defined Table 0002 – Substance refusal, Appendix B.
	RXA-19	Indication	[0..*]	O		IX	
	RXA-20	Completion Status	[0..1]	RE	Shall be “RE”		
	RXA-21	Action Code - RXA	[1..1]	R		RE	
	RXA-22	System Entry Date/Time	[0..1]	O		IX	
	RXA-23	Administered Drug Strength Volume	[0..1]	O		IX	
	RXA-24	Administered Drug Strength Volume	[0..1]	O		IX	
	RXA-25	Administered Barcode Identifier	[0..1]	O		IX	
	RXA-26	Pharmacy Order Type	[0..1]	O		IX	

VXU RXA notes – no vaccination: refusal

- See Table 21 for a list of LOINC that may be used in a corresponding OBX for *no vaccination: refusal*.
- Within an Immunization Event (Refused) Order Segment Group, RXA-5 shall indicate the refused vaccine, RXA-20 shall be “RE” and RXA-18 shall contain a coded refusal reason.
- RXA-18: Substance/Treatment Refusal Reason
 - If RXA-20 is RE, then this field shall be populated. The message will be rejected if an invalid value is supplied in the incoming message.
- RXA-21: Action Code
 - The default value is “A”. “U” is treated as “A”.

VXU RXA example – no vaccination: refusal

RXA|0|1|20091010|20091010|107^DTAP-NOS^CVX|999|||||||00^Parentalrefusal^NIP002||RE

LOINC accepted in a corresponding OBX segment – no vaccination: refusal

- LOINC is used in the OBX to message additional information. See Table 21 for a list of LOINC used by the IIS in processing information related to *no vaccination: refusal* in VXU messages.

Table 21. LOINC accepted in a corresponding OBX for *no vaccination: refusal* in VXU messaging

Description	LOINC for Use in OBX-3	Corresponding OBX-5 Value Set	OBX-5 Value Saved/stored by IIS?	Local Notes for No Vaccination: Refusal
Annotation comment (free text)	48767-8	N/A	[No]	

RXA – Pharmacy/Treatment Administration Segment – No Vaccination: Specific Vaccine Contraindication

Note: RXA field-level usage specifications have been flattened (conditional usage removed); the RXA field-level specifications below are specific to submission of no vaccination: specific vaccine contraindication.

Table 22. Local RXA field-level specifications for *no vaccination: specific vaccine contraindication* in VXU messaging¹⁶

NO VACCINATION: CONTRAINDICATION	Seq	Element Name	Nat'l Cardinality	Nat'l Usage	Nat'l Conformance Notes	Local Usage Change	Local Conformance Notes
	RXA-1	Give Sub-ID Counter	[1..1]	R	Shall be "0"		
	RXA-2	Administration Sub-ID Counter	[1..1]	R	Shall be "1"		
	RXA-3	Date/Time Start of Administration	[1..1]	R	Shall be the date/time the report of the specific vaccine contraindication is being made ¹⁷		

¹⁶ Derived from Table 5-12, Pharmacy/Treatment Administration, and accompanying notes in the National IG.

¹⁷ Inferred per [Guidance on Populating OBX-14](#), AIRA

NO VACCINATION: CONTRAINDICATION	RXA-4	Date/Time End of Administration	[0..1]	O		IX	
	RXA-5	Administered Code	[1..1]	R	Shall indicate the contraindicated vaccine		
	RXA-6	Administered Amount	[1..1]	R	Shall be "999"	IX	
	RXA-7	Administered Units	[0..0]	X			
	RXA-8	Administered Dosage Form	[0..1]	O		IX	
	RXA-9	Administration Notes	[0..*]	O		IX	
	RXA-10	Administering Provider	[0..1]	O		IX	
	RXA-11	Administered-at Location	[0..1]	O		IX	
	RXA-12	Administered Per (Time Unit)	[0..1]	O		IX	
	RXA-13	Administered Strength	[0..1]	O		IX	
	RXA-14	Administered Strength Units	[0..1]	O		IX	
	RXA-15	Substance Lot Number	[0..*]	O		IX	
	RXA-16	Substance Expiration Date	[0..1]	O		IX	
	RXA-17	Substance Manufacturer Name	[0..1]	O	See MVX	IX	
	RXA-18	Substance/ Treatment Refusal Reason	[0..0]	X			
	RXA-19	Indication	[0..*]	O		IX	
	RXA-20	Completion Status	[0..1]	RE	Shall be "NA"		
	RXA-21	Action Code - RXA	[1..1]	R		RE	

NO VACCINATION: CONTRAINDICATION	RXA-22	System Entry Date/Time	[0..1]	O		IX	
	RXA-23	Administered Drug Strength Volume	[0..1]	O		IX	
	RXA-24	Administered Drug Strength Volume	[0..1]	O		IX	
	RXA-25	Administered Barcode Identifier	[0..1]	O		IX	
	RXA-26	Pharmacy Order Type	[0..1]	O		IX	

VXU RXA notes – no vaccination: specific vaccine contraindication

- An RXA indicating *no vaccination: specific vaccine contraindication* shall be followed by at least one OBX segment indicating the contraindication, using LOINC 30945-0. See [Table 23](#) for a list of LOINC that may be used in a corresponding OBX for *no vaccination: specific vaccine contraindication*.
- Patient-level contraindications to vaccination can also be messaged; see [Table 24](#) for specifications.
- Within an Immunization Event (Contraindicated) Order Segment Group, RXA-5 shall indicate the contraindicated vaccine and RXA-20 shall be NA, indicating that a dose was not administered.

VXU RXA example – no vaccination: specific vaccine contraindication

RXA|0|1|20210808|20210808|998^No Vaccine Administered^CVX|999|||

LOINC accepted in a corresponding OBX segment – no vaccination: specific vaccine contraindication

- LOINC is used in the OBX to message additional information. See Table 23 for a list of LOINC used by the IIS in processing information related to *no vaccination: specific vaccine contraindication* in VXU messages.

Table 23. LOINC accepted in a corresponding OBX for *no vaccination: specific vaccine contraindication* in VXU messaging

Description	LOINC for Use in OBX-3	Corresponding OBX-5 Value Set	OBX-5 Value Saved/stored by IIS?	Local Notes for No Vaccination: Specific Vaccine Contraindication
Vaccination contraindication/precaution	30945-0	See PHVS_VaccinationContraindication_IIS	No	Not supported
Date vaccination contraindication/precaution effective	30946-8	N/A	No	Not supported
Date of vaccination temporary contraindication/precaution expiration	30944-3	N/A	No	Not supported
Annotation comment (free text)	48767-8	N/A	No	Not supported

RXA – Pharmacy/Treatment Administration Segment – **No Vaccination: Patient-Level Observation**

Note: RXA field-level usage specifications have been flattened (conditional usage removed); the RXA field-level specifications below are specific to submitting no vaccination: patient-level observation. This type of RXA is needed to submit a patient's history of disease, serological evidence of immunity, and reaction not attributable to a specific administration event, for example.

Table 24. Local RXA field-level specifications for *no vaccination: patient-level observation* in VXU messaging¹⁸

	Seq	Element Name	Nat'l Cardinality	Nat'l Usage	Nat'l Conformance Notes	Local Usage Change	Local Conformance Notes
	RXA-1	Give Sub-ID Counter	[1..1]	R	Shall be "0"		
	RXA-2	Administration Sub-ID Counter	[1..1]	R	Shall be "1"		

¹⁸ Derived from Table 5-12, Pharmacy/Treatment Administration, and accompanying notes in the National IG.

NO VACCINATION: PATIENT-LEVEL OBSERVATION	RXA-3	Date/Time Start of Administration	[1..1]	R	Shall be the date/time the patient observation report is being made ¹⁹		
	RXA-4	Date/Time End of Administration	[0..1]	O		IX	
	RXA-5	Administered Code	[1..1]	R	RXA-5.1 shall be CVX code "998"		
	RXA-6	Administered Amount	[1..1]	R	Shall be "999"	IX	
	RXA-7	Administered Units	[0..0]	X		IX	
	RXA-8	Administered Dosage Form	[0..1]	O		IX	
	RXA-9	Administration Notes	[0..*]	O		IX	
	RXA-10	Administering Provider	[0..1]	O		IX	
	RXA-11	Administered-at Location	[0..1]	O		IX	
	RXA-12	Administered Per (Time Unit)	[0..1]	O		IX	
	RXA-13	Administered Strength	[0..1]	O		IX	
	RXA-14	Administered Strength Units	[0..1]	O		IX	
	RXA-15	Substance Lot Number	[0..*]	O		IX	
	RXA-16	Substance Expiration Date	[0..1]	O		IX	
	RXA-17	Substance Manufacturer Name	[0..1]	O	See MVX	IX	

¹⁹ Per [Guidance on Populating OBX-14](#), AIRA

NO VACCINATION: PATIENT-LEVEL OBSERVATION	RXA-18	Substance/Treatment Refusal Reason	[0..0]	X			
	RXA-19	Indication	[0..*]	O		IX	
	RXA-20	Completion Status	[0..1]	RE	Shall be "NA"		
	RXA-21	Action Code - RXA	[1..1]	R		RE	
	RXA-22	System Entry Date/Time	[0..1]	O		IX	
	RXA-23	Administered Drug Strength Volume	[0..1]	O		IX	
	RXA-24	Administered Drug Strength Volume	[0..1]	O		IX	
	RXA-25	Administered Barcode Identifier	[0..1]	O		IX	
	RXA-26	Pharmacy Order Type	[0..1]	O		IX	

VXU RXA notes – no vaccination: patient-level observation

- An RXA indicating *no vaccination: patient-level observation* shall be followed by submission of OBX segment(s) with additional information indicating the observation. See [Table 25](#) for a list of LOINC that may be used in a corresponding OBX for *no vaccination: patient-level observation*.
- Within a Patient Observation Order Segment Group, RXA-5.1 shall be the CVX code 998 and RXA-20 shall be NA. An OBX should follow.

VXU RXA example – no vaccination: patient-level observation

RXA|0|1|20210808|20210808|998^No Vaccine Administered^CVX|999|||

LOINC accepted in a corresponding OBX segment – no vaccination: patient-level observation

- LOINC is used in the OBX to message additional information. See Table 25 for a list of LOINC used by the IIS in processing information related to *no vaccination: patient-level observation* in VXU messages.

Table 25. LOINC accepted in a corresponding OBX for *no vaccination: patient-level observation* in VXU messaging

Description	LOINC for Use in OBX-3	Corresponding OBX-5 Value Set	OBX-5 Value Saved/stored by IIS?	Local Notes for No Vaccination: Patient-Level Observation
Immunization reaction (not attributable to a specific immunization event)	31044-1	See PHVS_VaccinationReaction_IIS	No	Not supported
Disease with serological evidence of immunity	75505-8	See PHVS_SerologicalEvidenceOfImmunity_IIS	No	Not supported
Disease with presumed immunity	59784-9	See PHVS_EvidenceOfImmunity_IIS	Yes	
Patient condition	75323-6		No	Not supported
Date of condition onset	85585-8	N/A	No	Not supported
Date of condition abatement	88878-4	N/A	No	Not supported

RXR – Pharmacy/Treatment Route Segment

Table 26. Local RXR field-level specifications in VXU messaging²⁰

Seq	Element Name	Nat'l Cardinality	Nat'l Usage	Nat'l Conformance Notes	Local Usage Change	Local Conformance Notes
RXR-1	Route	[1..1]	R	See NCIT	RE	
RXR-2	Administration Site	[0..1]	RE	See HL70163		

²⁰ Derived from Table 5-13, Pharmacy/Treatment Route Segment, and accompanying notes in the National IG.

RXR-3	Administration Device	[0..1]	O		IX	
RXR-4	Administration Method	[0..1]	O		IX	
RXR-5	Routing Instruction	[0..1]	O		IX	
RXR-6	Administration Site Modifier	[0..1]	O		IX	

VXU RXR example

RXR|IM^Intramuscular^HL70162|LT^Anterolateral Thigh (Left)^HL70163

OBX – Observation Result Segment

Table 27. Local OBX field-level specifications in VXU messaging²¹

Seq	Element Name	Nat'l Cardinality	Nat'l Usage	Nat'l Conformance Notes	Local Usage Change	Local Conformance Notes
OBX-1	Set ID - OBX	[1..1]	R	Shall be valued sequentially starting with the value "1" within a message		
OBX-2	Value Type	[1..1]	R	See HL70125 (constrained)		
OBX-3	Observation Identifier	[1..1]	R	See NIP003		
OBX-4	Observation Sub-ID	[1..1]	R	Shall be a positive integer	R	
OBX-5	Observation Value	[1..1]	R			
OBX-6	Units	[0..1]	C(R/O)	If OBX-2 is valued "NM" then R, otherwise O	IX	
OBX-7	References Range	[0..1]	O		IX	
OBX-8	Abnormal Flags	[0..*]	O		IX	
OBX-9	Probability	[0..1]	O		IX	

²¹ Derived from Table 5-7, Observation Segment, and accompanying notes in the National IG.

OBX-10	Nature of Abnormal Test	[0..*]	O		IX	
OBX-11	Observation Result Status	[1..1]	R	Shall contain the value "F"	R	
OBX-12	Effective Date of Reference Range Values	[0..1]	O		IX	
OBX-13	User Defined Access Checks	[0..1]	O		IX	
OBX-14	Date/Time of the Observation	[0..1]	RE		IX	
OBX-15	Producer's Reference	[0..1]	O		IX	
OBX-16	Responsible Observer	[0..*]	O		IX	
OBX-17	Observation Method	[0..1]	C(RE/O)	If OBX-3.1 is "64994-7" then RE, otherwise O; See PNHV_FundingEligibilityObsMethod_IIS	IX	
OBX-18	Equipment Instance Identifier	[0..*]	O		IX	
OBX-19	Date/Time of the Analysis	[0..1]	O		IX	
OBX-23	Performing Organization Name	[0..1]	O		IX	
OBX-24	Performing Organization Address	[0..1]	O		IX	
OBX-25	Performing Organization Medical Director	[0..1]	O		IX	

VXU OBX notes

- *Administered immunization*: The OBX segment should be used to report vaccine program funding eligibility and Vaccine Information Statement information for an *administered immunization*. See [Table 17](#) for information on accepted LOINC for report of an *administered immunization*.
- *Historical immunization*: The OBX segment may be used to report vaccine program funding eligibility and Vaccine Information Statement information for a *historical immunization*. See [Table 19](#) for information on accepted LOINC for report of a *historical immunization*.
- *No vaccination: refusal*: The OBX segment may be used to report an annotation comment (free text) for report of *no vaccination: refusal*. Use LOINC 48767-8 in OBX-3 to report an annotation comment associated with report of *no vaccination: refusal*.
- *No vaccination: specific vaccine contraindication*: MCIR currently does not support the submission of specific vaccine contraindications.
- *No vaccination: patient-level observation*: The OBX segment shall be used to report disease with presumed immunity observation for report of *no vaccination: patient-level observation*. See [Table 25](#) for information on accepted LOINC for report of *no vaccination: patient-level observation*.
- OBX-3: Observation Identifier
 - This is used to indicate the observation identifier (LOINC), and OBX-5 is used to indicate the corresponding value.

VXU OBX example – vaccine program funding eligibility

```
OBX|3|CE|30963-3^Vaccine funding source^LN||PHC70^Private Funds^CDCPHINVS|||||F|
OBX|4|CE|64994-7^Vaccine funding program eligibility category^LN||V01|||||F|
```

VXU OBX example – with VIS information

```
OBX|1|TS|69764-9^Date Vaccine Information Statement Published^LN||20130227|||||F|
OBX|2|TS|29769-7^Date Vaccine Information Statement Presented^LN||20160113|||||F|
```

VXU OBX example – a disease with presumed immunity

```
OBX|1|CE|59784-9^Disease with
presumed immunity^LN^^^||371111005^Immunity: Measles^SCT^^^|||||F|
```

QBP Messaging: Z34 and Z44 Profiles

Use the following specifications to support QBP messaging with the IIS. Specifications are for the Z34 and Z44 profiles:

- Z34, Request a complete immunization history; and
- Z44, Request evaluated immunization history and forecast.

Local QBP segment specifications

Table 28 details segment-level specifications for QBP messaging for the Z34 and Z44 profiles. Local usage is only noted where it is different from the National IG. Where local usage is blank, local usage is the same as the National IG. Elements indicated with a local usage of “IX” are ignored by the IIS.

Table 28. Local QBP segment specifications for Z34 and Z44 QBP messaging²²

Segment	Nat'l Cardinality	Nat'l Usage	Nat'l Conformance Notes	Local Usage Change	Local Conformance Notes
MSH – Message Header Segment	[1..1]	R			
SFT – Software Segment	[0..*]	O		IX	
QPD – Query Parameter Definition	[1..1]	R			
RCP – Response Control Parameter	[1..1]	R			

Local QBP Z34 field specifications by segment (Request complete immunization history)

The following tables detail field-level specifications for the Z34 QBP profile, presented by segment. Local usage is only noted where it is different from the National IG. Where local usage is blank, local usage is the same as the National IG. Elements indicated with a local usage of “IX” are ignored by the IIS.

²² Derived from Table 7-3, Request Complete Immunization History, and Table 11-4, Request Evaluated Immunization History and Forecast, in the National IG.

MSH – Message Header Segment

Table 29. Local MSH field-level specifications for Z34 QBP messaging, request complete immunization history²³

Seq	Element Name	Nat'l Cardinality	Nat'l Usage	Nat'l Conformance Notes	Local Usage Change	Local Conformance Notes
MSH-1	Field Separator	[1..1]	R	Shall be “ ”		
MSH-2	Encoding Characters	[1..1]	R	Shall be “^~\&”		
MSH-3	Sending Application	[0..1]	RE		R	
MSH-4	Sending Facility	[0..1]	RE		R	Should be in the format of “#####-##-##”
MSH-5	Receiving Application	[0..1]	RE		R	Shall be “MCIR”
MSH-6	Receiving Facility	[0..1]	RE		R	Shall be “MDCH”
MSH-7	Date/Time of Message	[1..1]	R	The degree of precision must be at least to the second, (format YYYYMMDDHHMMSS+/-ZZZZ)		
MSH-8	Security	[0..1]	O		IX	
MSH-9	Message Type	[1..1]	R	Shall be “QBP^Q11^QBP_Q11”		
MSH-10	Message Control ID	[1..1]	R			
MSH-11	Processing ID	[1..1]	R			
MSH-12	Version ID	[1..1]	R	Shall be “2.5.1”		
MSH-13	Sequence Number	[0..1]	O		IX	
MSH-14	Continuation Pointer	[0..1]	O		IX	
MSH-15	Accept Acknowledgment Type	[1..1]	R	Shall be “ER”		

²³ Derived from Table 7-4, MSH Specification for Request Complete Immunization History, in the National IG.

MSH-16	Application Acknowledgment Type	[1..1]	R	Shall be "AL"		
MSH-17	Country Code	[0..1]	O		IX	
MSH-18	Character Set	[0..1]	O		IX	
MSH-19	Principal Language of Message	[0..1]	O		IX	
MSH-20	Alternate Character Set Handling Scheme	[0..1]	O		IX	
MSH-21	Message Profile Identifier	[1..*]	R	Shall be "Z34^CDCPHINVS"		
MSH-22	Sending Responsible Organization	[0..1]	RE			
MSH-23	Receiving Responsible Organization	[0..1]	RE			

QBP Z34 MSH notes

- MSH-4: Sending Application
 - Contact MCIR for details and to be assigned a facility ID for this field. The value assigned by MCIR for your submitting system MUST be used for all messages sent.
- MSH-7: Date/Time of Message
 - The degree of precision must be at least to the second, including time zone. Format Example: YYYYMMDDHHMMSS+ZZZZ.
- MSH-11: Processing ID
 - Messages sent without a "P" or a "T" in the first component (MSH-11.1) will be rejected.

QPD – Query Parameter Definition

Table 30. Local QPD field-level specifications for Z34 QBP messaging, request complete immunization history²⁴

Seq	Element Name*	Nat'l Cardinality	Nat'l Usage	Nat'l Conformance Notes	Local Usage Change	Local Conformance Notes
QPD-1	Message Query Name	[1..1]	R	Shall be "Z34^Request Immunization History^CDCPH INVS"		
QPD-2	Query Tag	[1..1]	R			
QPD-3	Patient Identifier List	[0..*]	RE			
QPD-4	Patient Name (PID-5)	[0..1]	RE		R	
QPD-5	Patient Mother Maiden Name (PID-6)	[0..1]	RE			
QPD-6	Patient Date of Birth (PID-7)	[0..1]	RE		R	
QPD-7	Patient Sex (PID-8)	[0..1]	RE	See HL70001		See locally accepted values in User-defined Table 0001 – Administrative Sex, Appendix B .
QPD-8	Patient Address (PID-11)	[0..1]	RE			If Address Type (QPD-8.7) is blank, it's defaulted to "L"
QPD-9	Patient Home Phone (PID-13)	[0..1]	RE			
QPD-10	Patient Multiple Birth Indicator (PID-24)	[0..1]	RE	See HL70136		

²⁴ Derived from Table 7-5, QPD Input Parameter Specification, Table 7-6 QPD Input Parameter Field Description and Commentary, and accompanying notes in the National IG.

QPD-11	Patient Birth Order (PID-25)	[0..1]	RE			
QPD-12	Client Last Updated Date	[0..1]	O		RE	
QPD-13	Client Last Update Facility	[0..1]	O		IX	

* Where the element name includes parentheticals, the parenthetical references the corresponding PID field (e.g., the patient’s name included in a query in QPD-4 should match what would be submitted to the IIS in a VXU in PID-5).

QBP Z34 QPD notes

- QPD-3: Patient Identifier List
 - QPD-3.1 (ID Number): If this field is not valued, QPD-3 is not considered when seeking matching clients.
 - QPD-3.4 (Assigning Authority): If this field is not valued, QPD-3 is not considered when seeking matching clients.
 - The combination of values for QPD-3.1 and QPD-3.4 are intended to allow unique identification of a client if the data are found in the responding system.
 - QPD-3.5 (Identifier Type Code): If this field is not valued, QPD-3 is not considered when seeking matching clients.
- QPD-4: Patient Name
 - If this field is not valued, the query will return error.
- QPD-6: Patient Date of Birth
 - If this field is not valued to an accuracy of at least day, then this field is considered not valued.
- QPD-7: Patient Sex
 - If this field is not valued, then all values for this field are considered a match.

RCP – Response Control Parameter

Table 31. Local RCP field-level specifications for Z34 QBP messaging, request complete immunization history²⁵

Seq	Element Name	Nat'l Cardinality	Nat'l Usage	Nat'l Conformance Notes	Local Usage Change	Local Conformance Notes
RCP-1	Query Priority	[0..1]	RE	Shall be "I"		
RCP-2	Quantity Limited Request	[0..1]	R	Shall contain "RD" for records		

²⁵ Derived from Table 7-7, Response Control Parameter, and corresponding notes in the National IG.

RCP-3	Response Modality		O		IX	
RCP-4	Execution and Delivery Time		O		IX	
RCP-5	Modify Indicator		O		IX	
RCP-6	Sort-by Field		O		IX	
RCP-7	Segment Group Inclusion		O		IX	

QBP Z34 RCP notes

- RCP-1: Query Priority
 - Immediate priority is expected.
- RCP-2: Quantity Limited Request
 - The first component contains the count and the second contains “RD” for records.
 - Any value without a unit of ‘RD’ will be treated as invalid. An empty or invalid value will be treated as if no limit was submitted.
 - This field may contain a maximum number of records that may be returned.

Local QBP Z44 field specifications by segment (Request evaluated immunization history and forecast)

The following tables detail field-level specifications for the Z44 QBP profile, presented by segment. Local usage is only noted where it is different from the National IG. Where local usage is blank, local usage is the same as the National IG. Elements indicated with a local usage of “IX” are ignored by the IIS.

MSH – Message Header Segment

Table 32. Local MSH field-level specifications for Z44 QBP messaging, request evaluated immunization history and forecast²⁶

Seq	Element Name	Nat'l Cardinality	Nat'l Usage	Nat'l Conformance Notes	Local Usage Change	Local Conformance Notes
MSH-1	Field Separator	[1..1]	R	Shall be “ ”		
MSH-2	Encoding Characters	[1..1]	R	Shall be “^~\&”		

²⁶ Derived from Table 11-6, MSH Specifications for Requested Evaluated History and Forecast Immunization History Query, and accompanying notes in National IG.

MSH-3	Sending Application	[0..1]	RE		R	
MSH-4	Sending Facility	[0..1]	RE		R	Should be in the format of "####-##-##"
MSH-5	Receiving Application	[0..1]	RE		R	Shall be "MCIR"
MSH-6	Receiving Facility	[0..1]	RE		R	Shall be "MDCH"
MSH-7	Date/Time of Message	[1..1]	R	The degree of precision must be at least to the second, (format YYYYMMDD HHMMSS+/-ZZZZ)		
MSH-8	Security	[0..1]	O		IX	
MSH-9	Message Type	[1..1]	R	Shall be "QBP^Q11^QBP_Q11"		
MSH-10	Message Control ID	[1..1]	R			
MSH-11	Processing ID	[1..1]	R			
MSH-12	Version ID	[1..1]	R	Shall be "2.5.1"		
MSH-13	Sequence Number	[0..1]	O		IX	
MSH-14	Continuation Pointer	[0..1]	O		IX	
MSH-15	Accept Acknowledgment Type	[1..1]	R	Shall be "ER"		
MSH-16	Application Acknowledgment Type	[1..1]	R	Shall be "AL"		
MSH-17	Country Code	[0..1]	O		IX	
MSH-18	Character Set	[0..1]	O		IX	

MSH-19	Principal Language of Message	[0..1]	O		IX	
MSH-20	Alternate Character Set Handling Scheme	[0..1]	O		IX	
MSH-21	Message Profile Identifier	[1..*]	R	Shall be "Z34^CDCPHI NVS"		
MSH-22	Sending Responsible Organization	[0..1]	RE			
MSH-23	Receiving Responsible Organization	[0..1]	RE			

QBP Z44 MSH notes

- MSH-4: Sending Facility
 - Contact MCIR for details and to be assigned a Facility ID for this field. The value assigned by MCIR for your submitting system MUST be used for all messages sent.
- MSH-7: Date/Time of Message
 - The degree of precision must be at least to the second, including the time zone. Format Example: YYYYMMDDHHMMSSmmm+ZZZZ.
- MSH-11: Processing ID
 - Messages sent without a "P" or a "T" in the first component (MSH-11.1) will be rejected.

QPD – Query Parameter Definition

Table 33. Local QPD field-level specifications for Z44 QBP messaging, request evaluated immunization history and forecast²⁷

Seq	Element Name*	Nat'l Cardinality	Nat'l Usage	Nat'l Conformance Notes	Local Usage Change	Local Conformance Notes
QPD-1	Message Query Name	[1..1]	R	Shall be "Z44^Request Evaluated History and Forecast^CDCPHINVS"		
QPD-2	Query Tag	[1..1]	R			
QPD-3	Patient List	[0..*]	RE			
QPD-4	Patient Name (PID-5)	[0..1]	RE			
QPD-5	Patient Mother Maiden Name (PID-6)	[0..1]	RE			
QPD-6	Patient Date of Birth (PID-7)	[0..1]	RE		R	
QPD-7	Patient Sex (PID-8)	[0..1]	RE			See locally accepted values in User-defined Table 0001 – Administrative Sex, Appendix B .
QPD-8	Patient Address (PID-11)	[0..1]	RE			
QPD-9	Patient Home Phone (PID-13)	[0..1]	RE			
QPD-10	Patient Multiple Birth Indicator (PID-24)	[0..1]	RE			
QPD-11	Patient Birth Order (PID-25)	[0..1]	RE			
QPD-12	Client Last Updated Date	[0..1]	O		RE	
QPD-13	Client Last Update Facility	[0..1]	O		IX	

* Where the element name includes parentheticals, the parenthetical references the corresponding PID field (e.g., the patient's name included in a query in QPD-4 should match what would be submitted to the IIS in a VXU in PID-5).

²⁷ Derived from Table 11-7, QPD Input Parameter Specification, and Table 11-8, QPD Input Parameter Field Description and Commentary, in the National IG and accompanying notes.

QBP Z44 QPD notes

- QPD-3: Patient List
 - QPD-3.1 (ID Number): If this field is not valued, QPD-3 is not considered when seeking matching clients.
 - QPD-3.4 (Assigning Authority): If this field is not valued, QPD-3 is not considered when seeking matching clients.
 - The combination of values for QPD-3.1 and QPD-3.4 are intended to allow unique identification of a client if the data are found in the responding system.
 - QPD-3.5 (Identifier Type Code): If this field is not valued, QPD-3 is not considered when seeking matching clients.
- QPD-4: Patient Name
 - If this field is not valued, the query will return error.
- QPD-6: Patient Date of Birth
 - If this field is not valued to an accuracy of at least day, then this field is considered not valued.
- QPD-7: Patient Sex
 - If this field is not valued, then all values for this field are considered a match.

RCP – Response Control Parameter

Table 34. Local RCP field-level specifications for Z44 QBP messaging, request evaluated immunization history and forecast²⁸

Seq	Element Name	Nat'l Cardinality	Nat'l Usage	Nat'l Conformance Notes	Local Usage Change	Local Conformance Notes
RCP-1	Query Priority	[0..1]	RE	Shall be "1"		
RCP-2	Quantity Limited Request	[0..1]	R	See HL70126		
RCP-3	Response Modality		O		IX	
RCP-4	Execution and Delivery Time		O		IX	
RCP-5	Modify Indicator		O		IX	
RCP-6	Sort-by Field		O		IX	
RCP-7	Segment Group Inclusion		O		IX	

²⁸ Derived from Table 11-9, RCP Response Control Parameter Field Description and Commentary, and accompanying notes in the National IG.

QBP Z44 RCP notes

- RCP-1: Query Priority
 - Immediate priority is expected.
- RCP-2: Quantity Limited Request
 - The first component contains the count and the second contains “RD” for records.
 - Any value without a unit of ‘RD’ will be treated as invalid. An empty or invalid value will be treated as if no limit was submitted.
 - This field may contain a maximum number of records that may be returned.

ACK Messaging: Z23 Profile

Use the following to support the interpretation of ACK messages from the IIS. Specifications are for the Z23 profile; return an acknowledgment. The ACK message acknowledges receipt and processing of a submitted VXU message. It also acknowledges and responds to queries (QBP messages) that cannot be processed to support response (RSP) messaging.

Local ACK specifications

Table 35. ACK specifications²⁹

Segment	Nat'l Cardinality	Nat'l Usage	Local Segment/Field Notes
MSH – Message Header Segment	[1..1]	R	
MSA – Message Acknowledgement Segment	[1..1]	R	Review MSA-1 for a summary indication of the IIS processing response and sender follow-up expectations. See Table 36 for a summary of ACK message interpretation and sender follow-up expectations based on the MSA-1 value.
ERR – Error Segment	[0..*]	RE	<p>In addition to reviewing MSA-1, review ERR segment(s) for further detail. There will be one error segment for each error noted.</p> <ul style="list-style-type: none"> • ERR-2, Location: Indicates the location of the error • ERR-3, HL7 Error Code: See HL7-Defined Table 0357, Message Error Condition Codes. • ERR-4, Severity: Indicates the severity of the error. Severity codes returned include: <ul style="list-style-type: none"> ○ I, Information: Transaction successful, but includes returned information. ○ W, Warning: Transaction successful, but there may be issues. ○ E, Error: Transaction was not successful. The application rejected data it viewed as important. • ERR-5, Application Error Code: See the National Set of Error Codes, as compiled by AIRA. • ERR-8, User Message: The IIS will return locally defined text to explain the nature of the error further.

²⁹ Derived from Tables 6-1, Message Acknowledgement Segment, and 6-2, Error Segment, and accompanying notes in the National IG.

Table 36. ACK message interpretation and sender follow-up expectations³⁰

MSA-1 Value	Description	National IG Description	ERR Segment(s) and ERR-4 Severity	Interpretation of IIS Response	Sender Follow-up Expectation
AA	Application acknowledgment: accept	Message accepted and processed.	No ERR segments	Message accepted.	No action needed.
			ERR segment(s) with severity of 'I' for information . (No severity 'W' or 'E' errors).	Message accepted with returned information.	No action needed.
AE	Application acknowledgment: error	Message accepted and processed, and errors are being reported.	At least one ERR segment with severity of ' W ' for warning . (No severity 'E' errors.)	Message accepted, but there may be issues. These may include errors with potential for loss of data.	Take action to correct issue(s) in sending system.*
			At least one ERR segment with severity of ' E ' for error .	Message and/or data rejected. The IIS rejected data that it views as important.	Take action to correct issue(s) in sending system and resubmit.*
AR	Application acknowledgment: reject	Message rejected due to: <ul style="list-style-type: none"> • unsupported message type • unsupported event code • unsupported processing ID • unable to process for reasons unrelated to format or content 	At least one ERR segment with severity of ' E ' for error due to 1 of 4 conditions specified.	Message rejected. The message was not processed.	Take action to correct issue(s) in sending system and resubmit.*

*In some cases, the issue may be due to the IIS; work with the IIS team to identify the cause of the issue and appropriate next steps.

³⁰ Derived from [Guidance for HL7 ACK Messages to Support Interoperability](#), AIRA.

RSP Messaging: Z32, Z42, Z31, and Z33 Profiles

Use the following to support the interpretation of RSP messages from the IIS. Specifications are for the Z32, Z42, Z31, and Z33 profiles:

- Z32, Return a complete immunization history,
- Z42, Return an evaluated history and forecast,
- Z33, Return an acknowledgement with no person records found.

Local RSP specifications: Z32, Z42, Z31, and Z33

RSP messages for profiles Z32, Z42, Z31, and Z33 all share the specifications outlined in Table 37. The segments below represent a Z33 profile message. See Tables 38, 39, and 40 below for additional specifications for Z32, Z42, and Z31 RSP messages, respectively.

Table 37. RSP specifications for profiles Z32, Z42, Z31, and Z33³¹

Segment	Nat'l Cardinality	Nat'l Usage	Local Segment/Field Notes
MSH – Message Header Segment	[1..1]	R	Indicates the RSP profile being returned (see MSH-21).
MSA – Message Acknowledgement Segment	[1..1]	R	Indicates a summary of the IIS processing response (see MSA-1).
ERR – Error Segment	[0..1]	RE	Indicates the highest-level severity error encountered, if applicable.
QAK – Query Acknowledgement Segment	[1..1]	R	QAK-2 indicates the results of the query search. The IIS will return these QAK-2 values in the following circumstances: <ul style="list-style-type: none"> • OK: One match found (Z32 or Z42 response); List of candidate matches found (Z31 response) • NF: No patient match found (Z33 response); Patient match found but cannot be shared due to privacy reasons (Z33 response) • TM: Potential patient matches exceeds the maximum allowed for return (Z33 response) • AE: An error prevented the successful execution of the query (Z33 response)
QPD – Input Parameter Specification	[1..1]	R	Relays information from the requesting QBP QPD segment.
See Table 38 for additional Z32 specifications.			
See Table 39 for additional Z42 specifications.			
See Table 40 for additional Z31 specifications.			

³¹ Derived from Tables 8-1, 12-1, 9-1, and 10-1 in the National IG.

Local RSP Z32 specifications (Return complete immunization history)

In addition to the RSP segments noted in Table 37 above, the Z32 RSP will also contain additional segments.

Table 38. Continued RSP specifications for profile Z32³²

Segment	Nat'l Cardinality	Nat'l Usage	Local Segment/Field Notes
See Table 37 for the preceding specifications.			
PID – Patient Identifier Segment	[1..1]	R	
PD1 – Patient Demographic Segment	[0..1]	RE	
NK1 – Next of Kin	[0..1]	RE	
Begin order group	[0..*]	RE	<p>The immunization history information will be returned using Immunization Event Order Segment Group(s)/Immunization Event with Evaluation Order Segment Groups (ORC, RXA groupings), with each group representing each vaccination in the history.</p> <ul style="list-style-type: none"> • Each RXA will have corresponding OBXs indicating evaluation information. • For combination vaccines, multiple related sets of evaluation OBX segments will be present, one for each target disease.
ORC – Order Request Segment	[1..1]	R	
RXA – Pharmacy/Treatment Administration	[1..1]	R	
RXR – Pharmacy/Treatment Route	[0..1]	RE	
Begin observation	[0..*]	RE	
OBX – Observation Segment	[1..1]	R	
End observation			
End order group			

³² Derived from Table 8-1, Return Complete Immunization History Response Grammar, in the National IG.

Local RSP Z42 specifications (Return evaluated immunization history and forecast)

In addition to RSP segments noted in Table 37 above, the Z42 RSP will also contain additional segments.

Table 39. Continued RSP specifications for profile Z42³³

Segment	Nat'l Cardinality	Nat'l Usage	Local Segment/Field Notes
See Table 37 for the preceding specifications.			
PID – Patient Identifier Segment	[1..1]	R	
Begin immunization history and forecast group	[1..*]	R	<p>The evaluated immunization history information will be returned in the Immunization Event with Evaluation Order Segment Groups (ORC, RXA groupings) reflecting each vaccination in the history.</p> <ul style="list-style-type: none"> • Each RXA will have corresponding OBXs indicating evaluation information. • For combination vaccines, multiple related sets of evaluation OBX segments will be present, one for each target disease. <p>The immunization forecast information will be returned by a Forecast Order Segment Group (an ORC, RXA, or OBX grouping).</p> <ul style="list-style-type: none"> • The RXA will have RXA-5.1 valued “998” and RXA-20 valued “NA.” • This RXA will be followed by OBXs indicating forecasting information for each vaccine group.
ORC – Order Request Segment	[1..1]	R	
RXA – Pharmacy/Treatment Administration	[1..1]	R	
RXR – Pharmacy/Treatment Route	[0..1]	RE	
Begin observation	[1..*]	R	
OBX – Observation Segment	[1..1]	R	The IIS will return the following evaluation OBXs in the Immunization Event with Evaluation Order Segment Group(s), if the patient has history of vaccination:

³³ Derived from Table 12-1, Return Evaluated Immunization History and Forecast Response Grammar, in the National IG.

			<ul style="list-style-type: none"> • Vaccine type (LOINC 30956-7) • Dose validity (LOINC 59781-5) • Dose number of the evaluated event (LOINC 30973-2) • Immunization schedule used (LOINC 59779-9) <p>The IIS will return the following forecasting OBXs in a Forecast Order Segment Group:</p> <ul style="list-style-type: none"> • Vaccine Due Next (LOINC 30979-9) • Immunization schedule used (LOINC 59779-9) • Recommended due date* (LOINC 30980- 7) • Earliest date due (LOINC 30981-5) • Overdue date (LOINC 59778-1) • Dose number of the evaluated event (LOINC 30973-2) • Number of Doses in Primary Series (LOINC 59782-3) • Status in the immunization series (LOINC 59783- 1)
End observation			
End immunization history and forecast group			

Local RSP Z31 specifications

The Z31 RSP will contain additional segments in addition to those noted in Table 37 above.

Table 40. Continued RSP specifications for profile Z31³⁴

Segment	Nat'l Cardinality	Nat'l Usage	Local Segment/Field Notes
See Table 37 for the preceding specifications.			
Begin response	[1..1]	R	
Begin patient identifier list	[1..*]	R	The IIS will not consider the QBP RCP-2 value in responding. The IIS will return one potential match.
PID – Patient Identifier Segment	[1..1]	R	
End patient identifier			
End response			

³⁴ Derived from Table 9-1, [Return a List of Candidates] Response Grammar, in the National IG.

Appendices

Appendix A: Local Usage Designations

Appendix B: Key Local Values and Codes

Appendix C: Sample Messages

Appendix D: National Immunization Data Exchange Resources

Appendix A. Local Usage Designations

Table A1. Interpreting local usage designations for VXU or QBP messaging to an IIS³⁵

Symbol	Definition	Sending Application Operation Requirement	Receiving Application (IIS) Operation Requirement
R	Required	The sending application SHALL populate 'R' elements with a non-empty value.	The receiving application SHALL process (save/print/ archive/etc.) the information conveyed by a required element. A receiving application SHALL raise an exception due to the absence of a required element. A receiving application SHALL NOT raise an error due to the presence of a required element.
RE	Required but may be empty	The sending application SHALL populate 'RE' elements with a non-empty value if relevant data exists.	The receiving application SHALL process (save/print/ archive/etc.) the information conveyed by a required but may be an empty element. The receiving application SHALL process the message if the element is omitted (that is, an exception SHALL NOT be raised because the element is missing).
C(a/b)	Conditional	An element with a conditional usage code has an associated condition predicate that determines the element's operational specifications (usage code). If the condition predicate associated with the element is true, follow the rules for a, which shall be one of "R", "RE", or "X": If the condition predicate associated with the element is false, follow the rules for b which shall be one of "R", "RE", or "X". a and b can be valued the same.	
X	Not supported	The sending application SHALL not populate 'X' elements.	The receiving application SHALL NOT process (save/print/ archive/etc.) the information conveyed by a not-supported element. If the element is sent, the receiving application may process the message, SHALL ignore the element, and MAY raise an exception.
IX	Ignored	The sending application MAY populate 'IX' elements.	If the element is not sent, no action is taken. If the element is sent, it is ignored.

³⁵ Derived from Table 3-2, Sending Application Conformance and Receiving Application Conformance, and corresponding notes in the National IG.

Appendix B. Key Local Values and Codes

The following tables provide information about key values and codes accepted by the IIS and additional information about how the IIS processes and uses these values/codes.

Identifier type – User-defined Table 0203 (patient)

Use PID-3 to denote the identifier type for the patient.

Table B1. Identifier values for a patient³⁶

Value	Nat'l Description	Saved/stored by IIS?	Local Notes
MR	Medical Record Number	Yes	Preferred
PT	Patient External Identifier	Yes	
PI	Patient Internal Identifier	Yes	
SR	State Registry Id	Yes	
MA	Medicaid Number	Yes	
WC	WIC Identifier	Yes	

Administrative sex – User-defined Table 0001

Use in PID-8 to reflect self-reported gender.

Table B2. Administrative sex values³⁷

Value	Nat'l Description	Saved/stored by IIS?	Local Notes
F	Female	Yes	
M	Male	Yes	
X	Non-binary	Yes	
U	Unknown/ Undifferentiated	Yes	
<empty field>			Defaults to “U” if left empty

³⁶ See User-defined Table 0203 – Identifier type, within Appendix A of the National IG.

³⁷ See User-defined Table 0001 – Sex, within Appendix A of the National IG.

Race – User-defined Table 0005

Use PID-10 to indicate the patient's race.

Table B3. Race values³⁸

Value	Nat'l Description	Saved/stored by IIS?	Local Notes
1002-5	American Indian or Alaska Native	Yes	
2028-9	Asian	Yes	
2076-8	Native Hawaiian or Pacific Islander	Yes	
2054-5	Black or African American	Yes	
2106-3	White	Yes	
2131-1	Other Race	Yes	
2135-2	Hispanic or Latino	Yes	
2186-5	Not Hispanic or Latino	Yes	
2034-7	Chinese	Yes	
2039-6	Japanese	Yes	
2036-2	Filipino	Yes	
2076-8	Hawaiian	Yes	
2129-5	Arab	Yes	
2118-8	Middle Eastern or North African	Yes	
2122-0	Iraqi	Yes	
2126-1	Afghanistan	Yes	
1125-4	Bay Mills Chippewa	Yes	
1130-4	Grand Traverse Band of Ottawa/Chippewa	Yes	
1481-1	Hannahville	Yes	
1482-9	Huron Potawatomi	Yes	
1131-2	Keweenaw	Yes	
1134-6	Lac Vieux Desert Chippewa	Yes	
1135-3	Lake Superior	Yes	
1413-4	Michigan Ottawa	Yes	
1483-7	Pokagon Potawatomi	Yes	
1143-7	Saginaw Chippewa	Yes	
1145-2	Sault Ste. Marie Chippewa	Yes	
UNK	Unknown/Undetermined	Yes	
PHC1175	Preferred not to say	Yes	

³⁸ See User-defined Table 0005 – Race, within Appendix A of the National IG.

Ethnic group – CDCREC

Use PID-22 to indicate the patient's ethnic group.

Table B4. Ethnic group values³⁹

Value	Nat'l Description	Saved/stored by IIS?	Local Notes
2135-2	Hispanic or Latino	Yes	
2186-5	Not Hispanic or Latino	Yes	
2137-8	Spaniard	Yes	
2148-5	Mexican	Yes	
2155-0	Central American	Yes	
2165-9	South American	Yes	
2178-2	Latin American	Yes	
2180-8	Puerto Rican	Yes	
2182-4	Cuban	Yes	
2184-0	Dominican	Yes	
2138-6	Andalusian	Yes	
2139-4	Asturian	Yes	
2140-2	Castillian	Yes	
2141-0	Catalonian	Yes	
2142-8	Belearic Islander	Yes	
2143-6	Gallego	Yes	
2144-4	Valencian	Yes	
2145-1	Canarian	Yes	
2146-9	Spanish Basque	Yes	
2149-3	Mexican American	Yes	
2150-1	Mexicano	Yes	
2151-9	Chicano	Yes	
2152-7	La Raza	Yes	
2153-5	Mexican American Indian	Yes	
2156-8	Costa Rican	Yes	
2157-6	Guatemalan	Yes	
2158-4	Honduran	Yes	
2159-2	Nicaraguan	Yes	
2160-0	Panamanian	Yes	

³⁹ See CDCREC – Ethnic Group, within Appendix A of the National IG.

2161-8	Salvadoran	Yes	
2162-6	Central American Indian	Yes	
2163-4	Canal Zone	Yes	
2166-7	Argentinean	Yes	
2167-5	Bolivian	Yes	
2168-3	Chilean	Yes	
2169-1	Colombian	Yes	
2170-9	Ecuadorian	Yes	
2171-7	Paraguayan	Yes	
2172-5	Peruvian	Yes	
2173-3	Uruguayan	Yes	
2174-1	Venezuelan	Yes	
2175-8	South American Indian	Yes	
2176-6	Criollo	Yes	
UNK	Unknown/Undetermined	Yes	
PHC1175	Preferred not to say	Yes	

Relationship – User-defined Table 0063

Use in NK1-3 to indicate the relationship of the responsible person to the patient.

Table B5. Relationship values⁴⁰

Value	Nat'l Description	Saved/stored by IIS?	Local Notes
FTH	Father	Yes	Accepted
GRD	Guardian	Yes	Accepted
MTH	Mother	Yes	Accepted
PAR	Parent	Yes	Accepted
SEL	Self	Yes	Accepted, if adult

⁴⁰ See User-defined Table 0063 – Relationship, within Appendix A of the National IG.

Identifier type – User-defined Table 0203 (administering provider)

Use RXA-10 to denote the identifier type for the administering provider.

Table B6. Identifier values for an administering provider⁴¹

Value	Nat'l Description	Saved/stored by IIS?	Local Notes
MD	Medical License Number	Yes	Used in RXA-10 to identify the healthcare provider that administered a vaccination.
NPI	National Provider Identifier	Yes	Used in RXA-10 to identify the healthcare provider that administered a vaccination.

Substance refusal reason – CDC-defined Table NIP002

Use in RXA-18 to denote substance refusal reason.

Table B7. Refusal values⁴²

Value	Nat'l Description	Saved/stored by IIS?	Local Notes
00	Parental decision	Yes	
01	Religious exemption	Yes	
02	Other	Yes	
03	Patient decision	Yes	

Action code – HL7-defined Table 0323

Use in RXA-21 to denote the action expected.

Table B8. Action code values⁴³

Value	Nat'l Description	Saved/stored by IIS?	Local Notes
A	Add	Yes	
D	Delete	Yes	
U	Update	Yes	Treated as an "A". To update a previously submitted record, send it in with "D." Then, correct the record in your local system and submit the corrected record using "A."

⁴¹ See User-defined Table 0203 – Identifier type, within Appendix A of the National IG.

⁴² See CDC-defined Table NIP002 – Substance refusal reason, within Appendix A of the National IG.

⁴³ See HL7-defined Table 0323 – Action code, within Appendix A of the National IG.

Financial class – User-defined Table 0064

Use OBX-5 to indicate eligibility for a funding program at the dose-administered level.

Table B9. Financial class codes⁴⁴

Code	Nat'l Label	Nat'l Description	Saved/ stored by IIS?	Local Notes
V01	Not VFC eligible	The client does not qualify for VFC because they do not have one of the statuses below (V02-V05).	Yes	The patient's health insurance covers some or all the cost of the vaccine, or the patient pays for the vaccine out of pocket.
V02	VFC eligible – Medicaid/ Medicaid Managed Care	All the following are true: <ul style="list-style-type: none"> • Client is currently eligible for Medicaid or Medicaid managed care • Client is < 19 years old • The type of vaccine administered is eligible for VFC funding 	Yes	The patient (<19 years old) is currently enrolled in Medicaid, including MI-Child [S-CHIP], and is receiving a VFC vaccine.
V03	VFC eligible - uninsured	All the following are true: <ul style="list-style-type: none"> • Client does not have health insurance • Client is < 19 years old • The type of vaccine administered is eligible for VFC funding 	Yes	The patient (<19 years old) has no health insurance.
V04	VFC eligible – American Indian/ Alaskan Native	All the following are true: <ul style="list-style-type: none"> • Client is a member of a federally recognized tribe • Client is < 19 years old • The type of vaccine administered is eligible for VFC funding 	Yes	The patient (<19 years old) is Native American or Alaskan Native.
V05	VFC eligible – underinsured at FQHC/RHC/ deputized provider	All the following are true: <ul style="list-style-type: none"> • Client has insurance, but insurance does not cover vaccines, limits the vaccines covered, or caps vaccine coverage at a certain amount • Client is receiving care at an FQHC, RHC, or deputized provider 	Yes	Patient (<19 years old) has health insurance, but the insurance does not cover any vaccine cost.

⁴⁴ See User-defined Table 0064 – Financial class, within Appendix A of the National IG.

		<ul style="list-style-type: none"> • Client is < 19 years old • The type of vaccine administered is eligible for VFC funding 		
V07	317 Special Funds – VFC/Public	Client is eligible to receive vaccines under the state/program immunization policy, and the vaccine administered is eligible for 317 funding	Yes	Used for special Local Health Department initiatives that are pre-approved by MDCH.
MIA04	MI-AVP (Michigan Adult Vaccine Program) – VFC/Public	N/A. See local note.	Yes	<p>Patient is receiving a MI-AVP vaccine (Td, Tdap, MMR, HepA, HepB, HPV, PCV13, PPSV23, Zoster) at a Local Health Department, Federally Qualified Health Center, or Migrant Health Center and is:</p> <ul style="list-style-type: none"> • Age 19 years or older • Uninsured or Underinsured
MIA05	Medicare - Private	N/A. See local note.	Yes	Patient is currently enrolled in Medicare
MIA08	Other Public Purchase - Private	N/A. See local note.	Yes	The patient is receiving a vaccine that was purchased by the local health department or MDCH. The patient and his/her health insurance do not pay for the cost of the vaccine.
MIA10	Public Purchase – All Hazard	N/A. See local note.	Yes	All Hazard stock (vaccine, antiviral) purchased by federal funds (Strategic National Stockpile).
MIA14	Medicaid Non VFC - Private	N/A. See local note.	Yes	<p>Patient is currently enrolled in Medicaid and is either:</p> <ul style="list-style-type: none"> • Age 19 years or older, or • Under 19 years and receiving a non-VFC vaccine
MIA15	Farmworker Supplemental	N/A. See local note.	Yes	Vaccines purchased with supplemental funds for farmworkers.
MIA16	Adult State Purchased	N/A. See local note.	Yes	Vaccines purchased with state funds to be used at state approved clinics for adult patients.

Appendix C. Sample Messages

Sample VXU messages

Administered

MSH|^~\&| |1234-56-78|MCIR|MDCH|20140225161706-0500||VXU^V04^VXU_V04|200399.6371|P|2.5.1|
PID|1||S24C757^^^EHR^MR||Short^Aldo^Tovi^^^L|Juniata^Gala|20130821|M||2028-9^Asian|96 Rodriguez
PI^^Hadley^MI^48440^USA^P|^PRN^PH^^^810^6383109|||||||2186-5^Not Hispanic or Latino|||||||
NK1|1|Short^Gala^^^M|GRD^Guardian^HL70063|
ORC|RE||S24C757.3^OIS|||||||
RXA|0|1|20131221||48^Hib^CVX|2||00^Administered^NIP001|||||K7164HI|20240630|P
MC^sanofipasteur^MVX||CP|A|
RXR|C28161^Intramuscular^NCIT|LA^Left arm^HL70163|
OBX|1|CE|64994-7^Eligibility StatusVaccine fund pgm elig cat^LN|1|V02^VFC Eligible - Medicaid^HL70064|||||F|||||VXC40^vaccine level^CDCPHINVS|

Historical

MSH|^~\&| |1234-56-78|MCIR|MDCH|20140225161706-0500||VXU^V04^VXU_V04|200399.6371|P|2.5.1|
PID|1||S24C999^^^EHR^MR||Short^Sport^M^^^L|Ju^Stein|20130821|M||96 Rodriguez
PI^^Hadley^MI^48440^USA^P|^PRN^PH^^^810^6383109|
NK1|1|Short^Mala^^^L|GRD^Guardian^HL70063|
ORC|RE||S24C757.1^OIS|
RXA|0|1|20131021||48^Hib^CVX|2||01^Historical-sourceunspecified^NIP001|||||R8370VT||PMC^sanofipasteur^MVX||||A|

Sample QBP messages

Request complete immunization history (Z34)

MSH|^~\&| |1234-56-78|MCIR|MDCH|20120706131542-0400||QBP^Q11^QBP_Q11|48077894|T|2.5.1||NE|AL|||||Z34^CDCPHINVS|MYHEALTHSYS
TEM|MYCLINIC
QPD|Z34^REQUEST IMMUNIZATION HISTORY
^CDCPHINVS|QT216987|12345678910^^^EMR^LR~56979^^^EMR^MR~MI12345^^^US^MA|S
NOW^MADELINE^MARIE^^^L|SMITH^SARAH^^^M|20100706|F|123 MAIN
STREET^^LANSING^MI^48837^USA^L|^PRN^^^517^5551212|Y|1|20120706121736-0400|
RCP||1^RD|

Request evaluated immunization history and forecast (Z44)

MSH|^~\&| |1234-56-78|MCIR|MDCH|20120706131542-0400||QBP^Q11^QBP_Q11|48077894|T|2.5.1||NE|AL|||||Z44^CDCPHINVS|MYHEALTHSYS
TEM|MYCLINIC
QPD|Z34^REQUEST EVALUATED HISTORY AND
FORECAST^CDCPHINVS|QT216987|12345678910^^^EMR^LR~56979^^^EMR^MR~MI12345^^^
US^MA|SNOW^MADELINE^MARIE^^^L|SMITH^SARAH^^^M|20100706|F|123 MAIN
STREET^^LANSING^MI^48837^USA^L|^PRN^^^517^5551212|Y|1|20120706121736-0400|
RCP||1^RD|

Appendix D. National Immunization Data Exchange Resources

Guidance, specifications, and codes

- [IIS Technical Guidance: HL7 Implementation](#)
CDC webpage listing key resources for HL7 immunization messaging, including:
 - [HL7 Version 2.5.1 Implementation Guide for Immunization Messaging, Release 1.5, 2018 Update](#)
 - CDC and AIRA Standards and Interoperability Committee (SISC) guidance on HL7 immunization messages
 - National Institute of Standards and Technology (NIST) tools, including the [Immunization Test Suite](#)
- [IIS Technical Guidance: Transport \(SOAP\)](#)
CDC webpage with information and specifications for using Simple Object Access Protocol (SOAP) web services to support transporting immunization data via HL7 messaging.
- [Immunization Data Code Sets](#)
This is a CDC webpage with current immunization-related code sets. It includes CVX codes, MVX codes, NDC crosswalk tables, and more. Subscribe to receive updates when codes are updated.

Training and Education

- [Technical Assistance Training Videos](#)
Short videos from AIRA explaining several technical aspects of IIS and immunization data exchange, including Transport 101, SOAP WSDL 101, and NIST Test Suite.
- [IIS Learning Hub](#)
Training, learning solutions, and resources from the Public Health Informatics Institute for public health staff and partners supporting and using IIS. It includes eLearning modules on the fundamentals of IIS (addressing interoperability and HL7) and Advanced HL7. It also includes Quick Reference Guides on [Breaking Down an HL7 Message](#), [HL7 Messaging Acronyms](#), [HL7 Message Profiles](#), and [HL7 Conformance Specification Parameters](#).

Closing Remarks

Thank you for using this manual to navigate the Michigan Care Improvement Registry (MCIR). This Local Implementation Guide is a companion to the national [HL7 Version 2.5.1 Implementation Guide for Immunization Messaging, Release 1.5, and Addendum](#) (National IG) to support electronic immunization data exchange with the Michigan Care Improvement Registry (IIS), MCIR.

Should you require additional support or have any questions, please don't hesitate to contact the MCIR HL7 Team at MDHHS-HL7@michigan.gov. We greatly appreciate your commitment to ensuring immunization compliance within Michigan.



End of Manual