

Oregon HL7 Version 2.5.1 Local Implementation Guide

Specifications for Submission of VXUs and QBPs to ALERT Immunization Information System

Oregon Immunization Program (OIP)
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Version History

Version #	Documented By	Version Date	Reason
0.1	Eric Larson	04/08/2011	Initial create through peer feedback by IIS and EHR community.
1.0	Eric Larson	04/11/2011	Group consensus to move forward into version 1.0 after review cycles.
1.1	Eric Larson		No Version 1.1 was published. Jumped from 1.0 to 1.3 to align with CDC IG versioning
1.2	Eric Larson		No Version 1.2 was published. Jumped from 1.0 to 1.3 to align with CDC IG versioning
1.3	Eric Larson	09/13/2011	Updated per the updated release of the CDC HL7 Implementation Guide.
1.4	Tracy Little	05/03/2022	Modified to reflect Oregon ALERT IIS specifications for HL7 2.5.1 messaging.
1.5	Tracy Little	12/31/2013	Updated examples and clarification on specific requirements.
2.0	Cylvia Tucker Eric Schuh, (Gainwell Technologies)	08/16/2022	Modified and updated to reflect Oregon ALERT IIS specifications for HL7 2.3.1 messaging.
2.1	Kerry Lionadh	11/4/2022	Updated Table 13. Local NK1 field-level specifications for VXU messaging and examples accompanying Tables 11 and 13 to conform with ALERT IIS standards.
2.2	Kerry Lionadh	09/05/2023	Corrected mistakes on page 65, Table 37: Eligibility Codes (added Other State-supplied code V07 and corrected Oregon-specific code for Locally-owned vaccine.
2.3	Kerry Lionadh	12/20/2023	Updated guide to reflect enhancements to ALERT IIS functionality related to inventory deduction and replacement after an immunization is deleted via data exchange.
2.4	Cylvia Tucker	11/20/2024	Removed reference to reporting requirement for COVID providers in: Table 1. IIS policies related to HL7 data exchange (page 5) Example below Table 9 List of local VXU segment specifications (page 14) Appendix B, Table 37 Eligibility code (page 65)

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 immunization data exchange with the Oregon immunization information system (IIS), ALERT. Specifically, this guide provides information and specifications to support submission of unsolicited vaccination record updates (VXU) and query by parameter (QBP) messages to the IIS.

This IG provides key information from the National IG (cardinality and usage for required, required but may be empty, and optional elements) as well as key information relevant to messaging with the IIS. Jurisdictional information includes:

- Laws and policies impacting data exchange
- Supported message types/profiles and functions
- Element usage designations, indicating where IIS processing is different from usage noted in the National IG (see [Appendix A](#) for a review of usage)
- Business rules impacting element processing
- Accepted codes and values

This Local IG is intended to be used along with the National IG, to serve as a reference for provider organization representatives and EHR/technical representatives in establishing a data interface with the IIS. It also serves as an ongoing reference to support ongoing monitoring and troubleshooting of production data interfaces with the IIS.

About the IIS

The ALERT Immunization Information System (IIS) at www.alertiis.org, is Oregon's statewide immunization registry. At the point of clinical care, ALERT IIS provides consolidated immunization histories for use by vaccination providers in determining appropriate vaccinations for children and adults. At the population level, ALERT IIS provides data that guides public health action to reduce vaccine-preventable disease through improving vaccination rates.

The IIS operates as an opt-out IIS for residents across the lifespan. Reporting immunizations to the IIS is required for provider organizations participating in state-supplied vaccine programs such as the Vaccines for Children (VFC) program or Vaccine Access Program (VAP). Additional notes on these policies are provided in Table 1.

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

Policy	Local notes
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Opt-out	<p>Patient participation in the IIS is governed by state law and Oregon Administrative Rules, defined in ORS 433.090.</p> <p>The PD1-12 field is used in VXU messaging to indicate patient “protection.” Some jurisdictions use this as an indicator of consent. This field should be “N” or left blank in submissions to ALERT.</p> <p>Patients who do not wish to have their records shared outside of the IIS can contact the ALERT IIS Help Desk (1-800-980-9431) to make the request.</p>
Mandated reporting for select providers	<p>Provider organizations participating in a state-supplied vaccine program, such as the Vaccine for Children (VFC) program, must comply with standards outlined in Oregon Administrative Rule 333.047:</p> <ul style="list-style-type: none"> • Report all immunizations to ALERT Immunization Information System (IIS) with a valid vaccine eligibility code within 14 days of administration. • Use the ALERT IIS inventory and ordering modules to manage your private and state-supplied vaccine stocks.

Onboarding for data exchange with the IIS

To establish a data exchange interface with the IIS, organizations must complete the onboarding process. Review the [ALERT IIS Readiness Checklist](#) to ensure your organization is ready for data exchange and onboarding with the IIS. When your organization is ready to establish a data exchange interface with the IIS, please complete the following steps:

1. [Enroll in ALERT](#) to gain access to the system and be assigned an ALERT Identification Number.
2. Complete the [Oregon ALERT IIS DX Registration Form](#). Please indicate the kind of data exchange (unilateral or bidirectional) your organization would like to participate with.
3. Work with the ALERT team to complete the [Oregon ALERT IIS Onboarding Process](#) for complete configuration and testing the interface between your health IT system and ALERT IIS.

Contact

Direct questions about HL7 messaging specifications and data exchange to the ALERT Onboarding Analyst assigned to your project or contact the ALERT IIS Data Exchange team at ALERT_DataExchange@odhsoha.oregon.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	Accepted by the IIS?	Saved/stored by the IIS?	Local notes
VXU	Z22	Add: "A" in RXA-21	Yes	Yes	
		Update: "U" in RXA-21	Yes	Yes	Please Note: Vaccine information will not update for immunizations that have been deducted from IIS inventory module.
		Delete: "D" in RXA-21	Yes	Yes	Please Note: As of ALERT IIS release 5.11, if an organization is using the IIS inventory module, if an immunization has been deducted from inventory stock, it can be deleted and the inventory item will be added back to the inventory module.
VXU	Z22	Administered dose(s)	Yes	Yes	
VXU	Z22	Partially administered dose(s)	Yes	Yes	
VXU	Z22	Historical dose(s)	Yes	Yes	
		Vaccination(s) with VIS(s)	Yes	Yes	
VXU	Z22	Refusal(s)	Yes	Yes	Please Note: Refusals, contraindications, immunity, and adverse events are stored on the user interface but not returned in acknowledgment or response messages.
VXU	Z22	Contraindication(s)	Yes	Yes	
VXU	Z22	Immunity/immunities	Yes	Yes	
VXU	Z22	Adverse event(s)	Yes	Yes	

VXU	Z22	Patient without immunization information: VXU with no RXA	No		RXA segment must be included in VXU.
QBP	Z34	Request complete immunization history	Yes	Yes	The IIS will respond with a Z32 RSP when a patient match is found.
QBP	Z44	Request evaluated immunization history and forecast	Yes	Yes	The IIS will respond with a Z42 RSP when a patient match is found.

***Please Note:** Data is consumed into the IIS for patient history, however the actual HL7 messages are only available in the system for 30 days. After that time, they are archived.

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

Message type	Message profile	Description	Returned by the IIS?	Local notes
ACK	Z23	Acknowledgement	Yes	Acknowledgment statements are returned for all messages and include indicator of any errors. Please see section regarding errors, page.
RSP	Z32/Z42	Immunization history	Yes	
		Immunization evaluation and forecast	Yes	The IIS immunization evaluation and forecast is included in response to a Z44
RSP	Z32/Z42	Partially administered dose(s)	Yes	
		Vaccination(s) with VIS(s)	No	
RSP	Z32/Z42	Refusal(s)	No	The IIS does NOT retain the specific CVX_Code of the vaccine refused. Refusal comments are added to patient history but are not included in returned response

RSP	Z32/Z42	Contraindication(s)	No	ALERT IIS will not return contraindications as part of the patient immunization history.
RSP	Z32/Z42	Immunity/immunities	No	ALERT IIS will not return immunity/immunities as part of the patient immunization history.
RSP	Z32/Z42	Adverse event(s)	No	ALERT will not return adverse events as part of the patient immunization history.
RSP	Z32/Z42	Patient with no vaccinations	Yes	
RSP	Z31	Return message with a candidate list of potential matches	No	
RSP	Z33	Return message indicating a patient match could not be found	Yes	The IIS will return when there are no patient matches found and when there are too many potential matches found. Response message is returned with 'NF' value, for 'Not Found'

Delta Summary – Differences from the National IG

Summary of local differences for VXU messaging

Tables 4 and 5 below provide a summary of local specifications for VXU messaging with the IIS where there are differences from the National IG. These tables highlight segment- and field-level elements where usage is constrained¹ or where usage is relaxed.² Optional elements in the National IG constrained to not supported locally (O->X) are omitted, for brevity.

Table 4. List of segment-level usage differences from the National IG for VXU messaging

Segment/Group	National IG Usage	Local Usage	Local Notes
Order Group	RE	R	An RXA is required in a VXU.

Table 5. List of field-level usage differences from the National IG for VXU messaging

Segment	Seq	Element Name	National IG Usage	Local Usage	Local Notes
MSH	4	Sending Facility	RE	R	IIS will process both MSH-4 and MSH-22 if sent in a message
MSH	5	Receiving Application	RE	X	Ignored
MSH	6	Receiving Facility	RE	X	Ignored
PID	8	Administrative Sex	R	RE	Strongly encouraged to identify potential matches
PID	15	Primary Language	O	RE	Strongly encouraged for better data quality
RXA	15	Lot Number	R	RE	Required for inventory deduction
RXA	17	Substance Manufacture Name	R	RE	
RXA	21	Action Code – RXA	C(R/O)	RE	The default value is A
RXR	1	Route	R	RE	Strongly encouraged for better data quality

¹ RE->R, O->RE, O->R

² R->RE, R->X, RE->X

Summary of local differences for QBP messaging

Tables 6, 7, and 8 below provide a summary of local specifications for QBP messaging with the IIS where there are differences from the National IG. These tables highlight segment- and field-level elements where usage is constrained³ or where usage is relaxed.⁴ Optional elements in the National IG constrained to not supported locally (O->X) are omitted, for brevity.

Table 6. List of segment-level usage differences from the National IG for QBP messaging

Segment/Group	Nat'l IG Usage	Local Usage	Local Notes
None			

Table 7. List of field-level usage differences from the National IG for QBP messaging, request complete immunization history (Z34)

Segment	Seq	Element Name	Nat'l IG Usage	Local Usage	Local Notes
MSH	4	Sending Facility	RE	R	IIS will process both MSH-4 and MSH-22 if sent in a message
MSH	5	Receiving Application	RE	X	Ignored
MSH	6	Receiving Facility	RE	X	Ignored

Table 8. List of field-level usage differences from the National IG for QBP messaging, request evaluated immunization history and forecast (Z44)

Segment	Seq	Element Name	Nat'l IG Usage	Local Usage	Local Notes
MSH	4	Sending Facility	RE	R	IIS will process both MSH-4 and MSH-22 if sent in a message
MSH	5	Receiving Application	RE	X	Ignored
MSH	6	Receiving Facility	RE	X	Ignored

³ RE->R, O->RE, O->R

⁴ R->RE, R->X, RE->X

VXU Messaging: Z22 Profile

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

Local VXU segment specifications

Table 9 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 as not supported locally (Local Usage of “X”) are ignored by the IIS.

Table 9. List of local VXU segment specifications⁵

Segment	Nat'l IG Cardinality	Nat'l IG Usage	Nat'l IG Conformance	Local Usage*	Local Conformance Notes
MSH – Message Header Segment	[1..1]	R	Every message begins with an MSH		Please work with your ALERT IIS Onboarding Data Exchange Analyst for organization AL# that should be included in MSH-4 and MSH-22
SFT – Software Segment	[0..*]	O		X	
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		

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

Begin patient visit group	[0..1]	O		X	
PV1 – Patient Visit	[1..1]	R		X	
PV2 – Patient Visit Additional Information	[0..1]	O		X	
End patient visit group					
Begin insurance group	[0..1]	O	May not repeat	X	
IN1 – Insurance Segment	[1..1]	R		X	
IN2 – Insurance Additional Information	[0..1]	O		X	
IN3 – Insurance Additional Information Certification	[0..1]	O		X	
End insurance group					
Begin order group	[0..*]	RE	Each VXU may have zero or more Order groups		
ORC – Order Request Segment	[1..1]	R	The order group in a VXU must have one ORC segments		
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	X	
End observation group					
End order group					

*Only noted if usage differs from the National IG.

VXU segment notes

- OBX: Clinics participating in the Vaccines for Children or other State supplied vaccine program must send Oregon-specific vaccine eligibility codes for all administered doses for all patients within the OBX segment. See local OBX field-level specifications for VXU messaging and local codes for additional detail.
- SFT, PV1, PV2, IN1, IN2, IN3, and NTE segments are ignored and will not cause the message to fail if included in the VXU message

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 as not supported locally (Local Usage of “X”) are ignored by the IIS.

MSH – Message Header Segment

Table 10. Local MSH field-level specifications for VXU messaging⁶

Seq	Element Name	Nat'l IG Cardinality	Nat'l IG Usage	Nat'l IG Conformance/ Value Set	Local Usage*	Local Conformance Notes
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⁶ Derived from Table 5-4, Message Header Segment and accompanying notes in the National IG.

1	Field Separator	[1..1]	R	Shall be valued “[”		
2	Encoding Characters	[1..1]	R	Shall be valued “^~\&”		
3	Sending Application	[0..1]	RE	See HL70361		
4	Sending Facility	[0..1]	RE	See HL70362	RE	Shall be valued “ALERT IIS Organization ID (ALERT #)” Please work directly with your Oregon Onboarding Data Exchange Analyst for the correct organizational Identification Number
5	Receiving Application	[0..1]	RE	See HL70361		
6	Receiving Facility	[0..1]	RE	See HL70362		
7	Date/Time of Message	[1..1]	R		R	Oregon requires the Date to be present, but the time is optional.
8	Security	[0..1]	O		X	
9	Message Type	[1..1]	R	Shall contain the constant value “VXU^V04^VXU_V04”		
10	Message Control ID	[1..1]	R			
11	Processing ID	[1..1]	R			
12	Version ID	[1..1]	R	Shall be valued “2.5.1”		
13	Sequence Number	[0..1]	O		X	
14	Continuation Pointer	[0..1]	O		X	
15	Accept Acknowledgment Type	[1..1]	R	See HL70155		
16	Application Acknowledgment Type	[1..1]	R	See HL70155		
17	Country Code	[0..1]	O		X	
18	Character Set	[0..1]	O		X	

19	Principal Language of Message	[0..1]	O		X	
20	Alternate Character Set Handling Scheme	[0..1]	O		X	
21	Message Profile Identifier	[1..*]	R	One occurrence shall contain the constant value "Z22^CDCPHINVS"		
22	Sending Responsible Organization	[0..1]	RE			Please work directly with your Oregon Onboarding Data Exchange Analyst for the correct organizational Identification Number
23	Receiving Responsible Organization	[0..1]	RE			

*Only noted if usage differs from the National IG.

VXU MSH notes

- For MSH-4 the "Parent" or "Hub" ALERT assigned identifying number will be used and the actual physical clinic site ALERT identifying number will be used in MSH-22. However, depending on how the organization is structured and sending configuration is established, will determine the appropriate values, so please work directly with an ALERT IIS Onboarding Analyst.
- MSH-7: The IIS ignores any time component.

VXU MSH example

```
MSH|^~\&|MYEHR|ALXXXX|ALERT IIS|ALERT
IIS|20220208173000||VXU^V04^VXU_V04|AL216322029531|P|2.5.1|||AL|AL||||Z22^CDCPHINVS|ALXXXX|
```

PID – Patient Identifier Segment

Table 11. Local PID field-level specifications for VXU messaging⁷

⁷ Derived from Table 5-11, Patient Identifier Segment and accompanying notes in the National IG.

Seq	Element Name	Nat'l IG Cardinality	Nat'l IG Usage	Nat'l IG Conformance/ Value Set	Local Usage*	Local Conformance Notes
1	Set ID - PID	[1..1]	R	Shall contain the value "1"		
3	Patient Identifier List	[1..*]	R			See accepted values for identifier type in User-defined Table 0203 – Identifier Type, Appendix B .
5	Patient Name	[1..*]	R			5.1: Shall contain family name 5.1.1: Shall contain surname 5.2: Shall contain given name
6	Mother's Maiden Name	[0..1]	RE			
7	Date/Time of Birth	[1..1]	R			
8	Administrative Sex	[1..1]	R	See User-defined Table 0001	RE	Strongly encouraged to identify potential matches. See accepted values in User-defined Table 0001 – Administrative Sex, Appendix B .
10	Race	[0..*]	RE	See CDCREC		See accepted values in User-defined Table 0005 – Race, Appendix B .
11	Patient Address	[0..*]	RE			Strongly encouraged to identify potential matches.
13	Phone Number - Home	[0..*]	RE			If populated, shall indicate telecommunication use code.

14	Phone Number - Business	[0..*]	O		X	
15	Primary Language	[0..1]	O	See	RE	Strongly encouraged for better data quality.
16	Marital Status	[0..1]	O		X	
17	Religion	[0..1]	O		X	
18	Patient Account Number	[0..1]	O		X	
22	Ethnic Group	[0..1]	RE	See CDCREC		See accepted values in CDCREC – Ethnic Group, Appendix B .
23	Birth Place		O		X	
24	Multiple Birth Indicator	[0..1]	RE			
25	Birth Order	[0..1]	C(RE/O)	If PID-24 is valued “Y,” then RE; otherwise, O		
26	Citizenship	[0..*]	O		X	
27	Veterans Military Status	[0..1]	O		X	
28	Nationality	[0..1]	O		X	
29	Patient Death Date and Time	[0..1]	C(RE/X)	If PID-30 is valued “Y,” then R; otherwise, X		
30	Patient Death Indicator	[0..1]	RE	See HL70136		
31	Identity Unknown Indicator	[0..1]	O		X	
32	Identity Reliability Code	[0..*]	O		X	
33	Last Update Date/Time	[0..1]	O		X	
34	Last Update Facility	[0..1]	O		X	
35	Species Code	[0..1]	O		X	
36	Breed Code	[0..1]	O		X	
37	Strain	[0..1]	O		X	
38	Production Class Code	[0..2]	O		X	
39	Tribal Citizenship	[0..*]	O		X	

*Only noted if usage differs from the National IG.

VXU PID notes

- The following fields are strongly encouraged to identify potential matches to the IIS and better data quality:
 - Middle Name & Alias Name (PID-5)
 - Administrative Sex (PID-8)
 - Patient Address (PID-11)
 - Race (PID-10)
 - Ethnic Group (PID-22)
 - Phone Number - Home & Email (PID-13)
 - Mother's Maiden Name (PID-6)
 - Medical Record Number “MR” & Social security number “SS” (PID-3)
 - Primary Language (PID-15)
- PID-25: If PID-24 is valued “Y,” then RE; otherwise, O.
- PID-29: If PID-30 is valued “Y,” then R; otherwise, X.

VXU PID example

```
PID|1||600883317^^ALXXX^MR~540544111^^USSSA^SS||MOUSE^MICKY^^L^L|Duck^Dafflin^^^^M|2000041
2|F||1002-5^American Indian or Alaska Native^CDCREC|ABC^AAA^ANYTOWN^OR^97301^USA^P||^
PRN^PH^^458^1234567^7654321~^NET^X.400^mickymouse@test.com
||eng^English^HL70296|S^S^HL70002|||||2186-5^Hispanic or Latino^CDCREC||Y|2||||N
```

PD1 – Patient Demographic Segment

Table 12. Local PD1 field-level specifications for VXU messaging⁸

Seq	Element Name	Nat'l IG Cardinal- ity	Nat'l IG Usage	Nat'l IG Conformance/ Value Set	Local Usage*	Local Conformance Notes
1	Living Dependency	[0..*]	O		X	
2	Living Arrangement	[0..1]	O		X	

⁸ Derived from Table 5-10, Patient Demographic Segment and accompanying notes in the National IG.

3	Patient Primary Facility	[0..0]	O		X	
5	Student Indicator	[0..1]	O		X	
6	Handicap	[0..1]	O		X	
7	Living Will Code	[0..1]	O		X	
8	Organ Donor Code	[0..1]	O		X	
9	Separate Bill	[0..1]	O		X	
10	Duplicate Patient	[0..*]	O		X	
11	Publicity Code	[0..1]	RE	See HL70215		
12	Protection Indicator	[0..1]	RE	See HL70136		Shall be N or Blank
13	Protection Indicator Effective Date	[0..1]	C(RE/X)	If PD1-12 is valued then RE; otherwise, X		
14	Place of Worship	[0..*]	O		X	
15	Advance Directive Code	[0..*]	O		X	
16	Immunization Registry Status	[0..1]	RE	See HL70441		See accepted values in User-defined Table 0441 – Immunization Registry Status, Appendix B .
17	Immunization Registry Status Effective Date	[0..1]	C(RE/X)	If the PD1-16 field is valued then RE; otherwise, X		
18	Publicity Code Effective Date	[0..1]	C(RE/X)	If the PD1-11 field is valued then RE; otherwise, X		
19	Military Branch	[0..1]	O		X	
20	Military Rank/Grade	[0..1]	O		X	
21	Military Status	[0..1]	O		X	

*Only noted if usage differs from the National IG.

VXU PD1 notes

- PD1-12: The protection code (PD1-12) sent to Oregon should always be N or blank. Regardless of whether patient consent was collected regarding data sharing, a VXU should be sent to ALERT IIS with the immunization information. Patients who do not wish to have their records shared outside of the IIS can contact the ALERT IIS Help Desk to make the request.
- PD1-13: If PD1-12 is valued then RE; otherwise, X.
- PD1-17: If the PD1-16 field is valued then RE; otherwise, X.
- PD1-18: If the PD1-11 field is valued then RE; otherwise, X.

VXU PD1 example

PD1|||||||02^Reminder/recall - Any Method^HL70215|N|20220415|||A|20220415|20220419

NK1 – Next of Kin Segment

Table 13. Local NK1 field-level specifications for VXU messaging⁹

Seq	Element Name	Nat'l IG Cardinality	Nat'l IG Usage	Nat'l IG Conformance / Value Set	Local Usage*	Local Conformance Notes
1	Set ID - NK1	[1..1]	R		R	If missing, a warning message is sent and the segment is ignored
2	Name	[1..*]	R			
3	Relationship	[1..1]	R	See HL70063		See accepted values in User-defined Table 0063 – Relationship, Appendix B .
4	Address	[0..*]	RE			
5	Phone Number	[0..*]	RE			If populated, shall indicate telecommunication use code.
6	Business Phone Number	[0..1]	O		X	

⁹ Derived from Table 5-5, Next of Kin Segment, and accompanying notes in the National IG.

7	Contact Role	[0..1]	O		X	
8	Start Date	[0..1]	O		X	
9	End Date	[0..1]	O		X	
10	Next of Kin / Associated Parties Job Title	[0..1]	O		X	
11	Next of Kin / Associated Parties Job Code/Class	[0..1]	O	See HL70327	X	
12	Next of Kin / Associated Parties Employee Number	[0..1]	O		X	
13	Organization Name - NK1	[0..*]	O		X	
14	Marital Status	[0..1]	O		X	
15	Administrative Sex	[0..1]	O	See User-defined Table 0001	X	
16	Date/Time of Birth	[0..1]	O		X	
17	Living Dependency	[0..*]	O		X	
18	Ambulatory Status	[0..*]	O		X	
19	Citizenship	[0..*]	O		X	
20	Primary Language	[0..1]	O		X	
21	Living Arrangement	[0..1]	O		X	
22	Publicity Code	[0..1]	O		X	
23	Protection Indicator	[0..1]	O		X	
24	Student Indicator	[0..1]	O		X	
25	Religion	[0..1]	O		X	
26	Mother's Maiden Name	[0..*]	O		X	

27	Nationality	[0..1]	O		X	
28	Ethnic Group	[0..*]	O		X	
29	Contact Reason	[0..*]	O		X	
30	Contact Person's Name	[0..*]	O		X	
31	Contact Person's Telephone Number	[0..*]	O		X	
32	Contact Person's Address	[0..*]	O		X	
33	Next of Kin/Associated Party's Identifiers	[0..*]	O		X	
34	Job Status	[0..1]	O		X	
35	Race	[0..*]	O		X	
36	Handicap	[0..1]	O		X	
37	Contact Person Social Security Number	[0..1]	O		X	
38	Next of Kin Birth Place	[0..1]	O		X	
39	VIP Indicator	[0..1]	O		X	

*Only noted if usage differs from the National IG.

VXU NK1 notes

- The following fields are encouraged to identify potential matches to the IIS and better data quality:
 - Address (NK1-4)
 - Phone Number (NK1-5)

VXU NK1 example

NK1|1|MOUSE^MARTHA|MTH^Mother^HL70063|123 MAIN ST^^PORTLAND^OR^50000^US^^^1843
|PRN^PH^^^123^1234567^7654321~^NET^X.400^marthamouse@test.com

ORC – Order Request Segment

Table 14. Local ORC field-level specifications for VXU messaging¹⁰

Seq	Element Name	Nat'l IG Cardinality	Nat'l IG Usage	Nat'l IG Conformance/ Value Set	Local Usage*	Local Conformance Notes
1	Order Control	[1..1]	R	Shall contain the value "RE "		
2	Placer Order Number	[0..1]	RE			
3	Filler Order Number	[1..1]	R	If RXA-20 is valued "NA" or "RE" then ORC-3.1 SHALL be valued "9999"		ORC-3 is required by ALERT, but the incoming value is not stored.
4	Placer Group Number	[0..1]	O		X	
5	Order Status	[0..1]	O		X	
6	Response Flag	[0..1]	O		X	
8	Parent	[0..1]	O		X	
9	Date/Time of Transaction	[0..1]	O		X	
10	Entered By	[0..1]	RE			
11	Verified By		O		X	
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		
13	Enterer's Location	[0..1]	O		X	
14	Call Back Phone Number	[0..2]	O		X	

¹⁰ Derived from Table 5-9, Common Order Segment and accompanying notes in the National IG.

15	Order Effective Date/Time	[0..1]	O		X	
16	Order Control Code Reason	[0..1]	O		X	
17	Entering Organization	[0..1]	RE	See HL70362		Use assigned AL# in ORC-17.1. This field is only evaluated and processed when MSH-22 sending responsible facility is populated
18	Entering Device	[0..1]	O		X	
19	Action By	[0..*]	O		X	
20	Advanced Beneficiary Notice Code	[0..1]	O		X	
21	Ordering Facility Name	[0..*]	O		X	
22	Ordering Facility Address	[0..*]	O		X	
23	Ordering Facility Phone Number	[0..*]	O		X	
24	Ordering Provider Address	[0..*]	O		X	
25	Order Status Modifier	[0..1]	O		X	
26	Advanced Beneficiary Notice Override Reason	[0..1]	O		X	
27	Filler's Expected Availability Date/Time	[0..1]	O		X	
28	Confidentiality Code	[0..1]	O		X	
29	Order Type	[0..1]	O		X	

30	Enterer Authorization Mode	[0..1]	O		X	
31	Parent Universal Service Identifier	[0..1]	O		X	

*Only noted if usage differs from the National IG.

VXU ORC notes

- ORC-3: When RXA-20 indicates a vaccine that was not administered or refused (NA or RE), the order filler number (ORC-3.1) must be populated with 9999. Immunization information will be rejected if ORC-3 is not properly populated
- ORC-12: If the first occurrence of RXA-9.1 is valued "00" and RXA-20 is valued "CP" or "PA" then RE; otherwise, O.
For better data quality, this Ordering Provider information is strongly recommended.

VXU ORC example

New Vaccine ORC:

```
ORC|RE|18586234H1434901^MYEHR|18586234H1434901^MYEHR|||||1588607600^BEST^DOCTOR
^NAME^DR.^L|||| AL####^OREGON CLINIC^HL70326|||||
```

RXA – Pharmacy/Treatment Administration Segment

The RXA segment may be used to convey information about administered immunizations, historical immunizations, patient refusals, 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. This variation results in numerous conditional usage designations and conditional predicates, as noted in the National IG. To clarify RXA field-level usage specifications for submission to the IIS, the conditional usage specifications were flattened.

Tables 15 through 19 below present RXA field-level specifications by message type:

- Table 15: Administered Immunization
- Table 16: Historical Immunization
- Table 17: No Vaccination: Refusal
- Table 18: No Vaccination: Specific Vaccine Contraindication

- Table 19: No Vaccination: Patient-Level Observation

RXA – Pharmacy/Treatment Administration Segment – Administered Immunization

Note: RXA field-level usage specifications have been flattened (conditional usage removed); the RXA field-level specifications below are specific to submission of administered immunizations. RXA field-level specifications to convey a newly administered dose of vaccine, i.e., a dose administered by the organization that is reporting this dose.

Table 15. Local RXA field-level specifications for an *administered immunization* in VXU messaging¹¹

Seq	Element Name	Nat'l IG Cardinality	Nat'l IG Usage	Nat'l IG Conformance/ Value Set	Local Usage*	Local Conformance Notes
1	Give Sub-ID Counter	[1..1]	R	Shall be "0"		
2	Administration Sub-ID Counter	[1..1]	R	Shall be "1"		
3	Date/Time Start of Administration	[1..1]	R			
4	Date/Time End of Administration	[0..1]	O		X	
5	Administered Code	[1..1]	R	See CVX, NDC, CPT		CVX codes is preferred.
6	Administered Amount	[1..1]	R			
7	Administered Units	[0..1]	C(R/X)	See UCUM		
8	Administered Dosage Form		O		X	
9	Administration Notes	[1..*]	R	Shall contain "00" for an administered vaccine		"00" required for inventory deduction
10	Administering Provider	[0..1]	RE		X	See accepted values in User-defined Table 0203 – Identifier Type, in Appendix B .

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

11	Administered-at Location	[0..1]	RE			ALERT IIS is expecting the AL# to be placed in RXA-11.4
12	Administered Per (Time Unit)	[0..1]	O		X	
13	Administered Strength	[0..1]	O		X	
14	Administered Strength Units	[0..1]	O		X	
15	Substance Lot Number	[0..*]	R		RE	Required for inventory deduction
16	Substance Expiration Date	[0..1]	RE			
17	Substance Manufacturer Name	[0..1]	R	See MVX	RE	
18	Substance/Treatment Refusal Reason	[0..0]	X			
19	Indication	[0..*]	O		X	
20	Completion Status	[0..1]	RE	Shall be "CP" or "PA"		
21	Action Code - RXA	[1..1]	R	See HL70323	RE	The default value is 'A' when RXA-21 is empty. 'A' and 'U' values both go through ALERT immunization deduplication to determine an immunization insert, update, or no action (already in ALERT).
22	System Entry Date/Time	[0..1]	O		X	
23	Administered Drug Strength Volume	[0..1]	O		X	

24	Administered Drug Strength Volume	[0..1]	O		X	
25	Administered Barcode Identifier	[0..1]	O		X	
26	Pharmacy Order Type	[0..1]	O		X	

*Only noted if usage differs from the National IG.

VXU RXA notes – administered immunization

- The following fields are strongly encouraged for better data quality:
 - Administering Provider (RXA-10)
 - Substance Lot Number (RXA-15)
 - Substance Manufacturer Name (RXA-17)
- RXA-11:
 - If the AL# is present in RXA-11.4, the value must match the value sent in MSH-22 (Sending Responsible Organization).
 - ALERT IIS only evaluates RXA-11.4 when MSH-22 is populated, and RXA-9 is administered (00^New immunization record^NIP001).

VXU RXA example – administered immunization

RXA|0|1|20211118|20211118|03^MMR^CVX|0.5|mL^milliliters^UCUM||00^Administered^NIP001|||||U1747GW||MSD^Merck and Co^MVX|||CP|A|

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. RXA field-level specifications to convey historical immunization information, i.e., a record of a vaccine dose from another source.

Table 16. Local RXA field-level specifications for a *historical immunization* in VXU messaging¹²

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

Seq	Element Name	Nat'l IG Cardinality	Nat'l IG Usage	Nat'l IG Conformance/ Value Set	Local Usage*	Local Conformance Notes
1	Give Sub-ID Counter	[1..1]	R	Shall be "0"		
2	Administration Sub-ID Counter	[1..1]	R	Shall be "1"		
3	Date/Time Start of Administration	[1..1]	R			
4	Date/Time End of Administration	[0..1]	O		X	
5	Administered Code	[1..1]	R	See CVX, NDC or CPT		CVX is preferred
6	Administered Amount	[1..1]	R	Shall be "999" when unknown		
7	Administered Units	[0..1]	C(R/X)	Not required when RXA-6 is valued "999"		
8	Administered Dosage Form	[0..1]	O		X	
9	Administration Notes	[1..*]	R	Shall contain "01" – "08" (from NIP001); shall not be valued "00"		Oregon has a specific value which is also accepted: "OU" – Outside USA
10	Administering Provider	[0..1]	O		X	Admin provider: Clinician ID-10 Last Name -10.2 First Name 10.3 Middle Name-10.4 Name Suffix-10.5 Name Prefix-10.6 Assigning Authority-10.9 Clinician ID Type-10.13 Professional Suffix-10.21
11	Administered-at Location	[0..1]	O		X	

12	Administered Per (Time Unit)	[0..1]	O		X	
13	Administered Strength	[0..1]	O		X	
14	Administered Strength Units	[0..1]	O		X	
15	Substance Lot Number	[0..*]	O		X	
16	Substance Expiration Date	[0..1]	O		X	
17	Substance Manufacturer Name	[0..1]	O	See MVX	X	
18	Substance/Treatment Refusal Reason	[0..0]	X			
19	Indication	[0..*]	O		X	
20	Completion Status	[0..1]	RE	Shall be "CP" or "PA"		
21	Action Code - RXA	[1..1]	R	See HL70323	RE	The default value is "A"
22	System Entry Date/Time	[0..1]	O		X	
23	Administered Drug Strength Volume	[0..1]	O		X	
24	Administered Drug Strength Volume	[0..1]	O		X	
25	Administered Barcode Identifier	[0..1]	O		X	
26	Pharmacy Order Type	[0..1]	O		X	

*Only noted if usage differs from the National IG.

VXU RXA notes – historical immunization

- RXA-7: Not required when RXA-6 is valued "999"

- RXA-9: If a NULL value is provided in this field in the incoming message, the new immunization record will be set to historical '01.' For all historical doses, indicate the source of the record:
 - |01^HISTORICAL INFORMATION - SOURCE UNSPECIFIED^NIP001|
 - |02^ HISTORICAL INFORMATION - from other provider^NIP001|
 - |03^ HISTORICAL INFORMATION - from parent's written record^NIP001|
 - |04^ HISTORICAL INFORMATION - from parent's recall^NIP001|
 - |05^ HISTORICAL INFORMATION - from other registry^NIP001|
 - |06^ HISTORICAL INFORMATION - from birth certificate^NIP001|
 - |07^ HISTORICAL INFORMATION - from school record^NIP001|
 - |08^ HISTORICAL INFORMATION - from public agency^NIP001|

VXU RXA example – historical immunization

RXA|0|1|20211216|20211216|115^Tdap^CVX|.5|mL^mL^UCUM||01^HISTORICAL INFORMATION - SOURCE UNSPECIFIED^NIP001|~~~~~|~ALXXX|~|27481|20220715|SKB^GlaxoSmithKline^MVX|^~|CP|A

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

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: refusal.

Table 17. Local RXA field-level specifications for *no vaccination: refusal* in VXU messaging¹³

Seq	Element Name	Nat'l IG Cardinality	Nat'l IG Usage	Nat'l IG Conformance/ Value Set	Local Usage*	Local Conformance Notes
1	Give Sub-ID Counter	[1..1]	R	Shall be "0"		
2	Administration Sub-ID Counter	[1..1]	R	Shall be "1"		
3	Date/Time Start of Administration	[1..1]	R			
4	Date/Time End of Administration	[0..1]	O		X	

¹³ Derived from Table 5-12, Pharmacy/Treatment Administration and accompanying notes in the National IG.

5	Administered Code	[1..1]	R	Shall contain the NOS CVX code for the refused vaccine		
6	Administered Amount	[1..1]	R	Shall be "999"		
7	Administered Units	[0..0]	X			
8	Administered Dosage Form	[0..1]	O		X	
9	Administration Notes	[1..*]	O		X	
10	Administering Provider	[0..1]	O		X	
11	Administered-at Location	[0..1]	O		X	
12	Administered Per (Time Unit)	[0..1]	O		X	
13	Administered Strength	[0..1]	O		X	
14	Administered Strength Units	[0..1]	O		X	
15	Substance Lot Number	[0..*]	O		X	
16	Substance Expiration Date	[0..1]	O		X	
17	Substance Manufacturer Name	[0..1]	O	See MVX	X	
18	Substance/Treatment Refusal Reason	[1..1]	R	See NIP002		
19	Indication	[0..*]	O		X	
20	Completion Status	[0..1]	RE	Shall be valued "RE"		
21	Action Code - RXA	[1..1]	R	See HL70323	RE	
22	System Entry Date/Time	[0..1]	O		X	
23	Administered Drug Strength Volume	[0..1]	O		X	

24	Administered Drug Strength Volume	[0..1]	O		X	
25	Administered Barcode Identifier	[0..1]	O		X	
26	Pharmacy Order Type	[0..1]	O		X	

*Only noted if usage differs from the National IG.

VXU RXA notes – 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.
- The IIS will add refusal comment to patient record but does NOT write immunization refusals outbound response message.

VXU RXA example – no vaccination: refusal

RXA|0|1|20120828|20120828|03^MMR^CVX^^^|999| || || || || || || || || ||00^parent refusal^NIP002| |RE|A|

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 18. Local RXA field-level specifications for *no vaccination: specific vaccine contraindication* in VXU messaging¹⁴

Seq	Element Name	Nat'l IG Cardinality	Nat'l IG Usage	Nat'l IG Conformance/ Value Set	Local Usage*	Local Conformance Notes
1	Give Sub-ID Counter	[1..1]	R	Shall be “0”		
2	Administration Sub-ID Counter	[1..1]	R	Shall be “1”		
3	Date/Time Start of Administration	[1..1]	R			

¹⁴ Derived from Table 5-12, Pharmacy/Treatment Administration and accompanying notes in the National IG.

4	Date/Time End of Administration	[0..1]	O		X	
5	Administered Code	[1..1]	R	Shall indicate contraindicated vaccine		
6	Administered Amount	[1..1]	R	Shall be "999"		
7	Administered Units	[0..0]	X			
8	Administered Dosage Form	[0..1]	O		X	
9	Administration Notes	[1..*]	O		X	
10	Administering Provider	[0..1]	O		X	
11	Administered-at Location	[0..1]	O		X	
12	Administered Per (Time Unit)	[0..1]	O		X	
13	Administered Strength	[0..1]	O		X	
14	Administered Strength Units	[0..1]	O		X	
15	Substance Lot Number	[0..*]	O		X	
16	Substance Expiration Date	[0..1]	O		X	
17	Substance Manufacturer Name	[0..1]	O	See MVX	X	
18	Substance/Treatment Refusal Reason	[0..0]	X			
19	Indication	[0..*]	O		X	
20	Completion Status	[0..1]	RE	Shall be valued "NA"		
21	Action Code - RXA	[1..1]	R	See HL70323	RE	

22	System Entry Date/Time	[0..1]	O		X	
23	Administered Drug Strength Volume	[0..1]	O		X	
24	Administered Drug Strength Volume	[0..1]	O		X	
25	Administered Barcode Identifier	[0..1]	O		X	
26	Pharmacy Order Type	[0..1]	O		X	

*Only noted if usage differs from the National IG.

VXU RXA notes – no vaccination: specific vaccine contraindication

- 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. Patient-level contraindication to vaccination can also be messaged; see Table 20 below for specifications.
- RXA segment should be used in conjunction with appropriate LOINC code in OBX segment (see section below)

VXU RXA example – no vaccination: specific vaccine contraindication

RXA|0|1|20220425|20220425|150^influenza, injectable, quadrivalent, preservative free^CVX|999|^||01^HISTORICAL INFORMATION - SOURCE UNSPECIFIED^|Oregon Clinic^123 Oregon Street,Anytown,OR^^|NA|A|

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 submission of no vaccination: patient-level observation.

Table 19. Local RXA field-level specifications for *no vaccination: patient-level observation* in VXU messaging¹⁵

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

Seq	Element Name	Nat'l IG Cardinality	Nat'l IG Usage	Nat'l IG Conformance/ Value Set	Local Usage*	Local Conformance Notes
1	Give Sub-ID Counter	[1..1]	R	Shall be "0"		
2	Administration Sub-ID Counter	[1..1]	R	Shall be "1"		
3	Date/Time Start of Administration	[1..1]	R			
4	Date/Time End of Administration	[0..1]	O		X	
5	Administered Code	[1..1]	R	Shall contain "998"		
6	Administered Amount	[1..1]	R	Shall be "999"		
7	Administered Units	[0..0]	X			
8	Administered Dosage Form	[0..1]	O		X	
9	Administration Notes	[1..*]	O		X	
10	Administering Provider	[0..1]	O		X	
11	Administered-at Location	[0..1]	O		X	
12	Administered Per (Time Unit)	[0..1]	O		X	
13	Administered Strength	[0..1]	O		X	
14	Administered Strength Units	[0..1]	O		X	
15	Substance Lot Number	[0..*]	O		X	
16	Substance Expiration Date	[0..1]	O		X	
17	Substance Manufacturer Name	[0..1]	O	See MVX	X	

18	Substance/Treatment Refusal Reason	[0..0]	X			
19	Indication	[0..*]	O		X	
20	Completion Status	[0..1]	RE	Shall be valued "NA"		
21	Action Code - RXA	[1..1]	R	See HL70323	RE	
22	System Entry Date/Time	[0..1]	O		X	
23	Administered Drug Strength Volume	[0..1]	O		X	
24	Administered Drug Strength Volume	[0..1]	O		X	
25	Administered Barcode Identifier	[0..1]	O		X	
26	Pharmacy Order Type	[0..1]	O		X	

*Only noted if usage differs from the National IG.

VXU RXA notes – 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.

VXU RXA example – no vaccination: patient-level observation

RXA|0|1|20220425|20220425|998^ No Vaccine Administered^CVX|999||||^^Oregon Clinic^123 Oregon Street,Anytown,OR^^||||^^|NA|A|

RXR – Pharmacy/Treatment Route Segment

Table 20. Local RXR field-level specifications in VXU messaging¹⁶

Seq	Element Name	Nat'l IG Cardinality	Nat'l IG Usage	Nat'l IG Conformance / Value Set	Local Usage*	Local Conformance Notes
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¹⁶ Derived from Table 5-13, Pharmacy/Treatment Route Segment and accompanying notes in the National IG.

1	Route	[1..1]	R	See NCIT	RE	
2	Administration Site	[0..1]	RE	See HL70163		
3	Administration Device	[0..1]	O		X	
4	Administration Method	[0..1]	O		X	
5	Routing Instruction	[0..1]	O		X	
6	Administration Site Modifier	[0..1]	O		X	

*Only noted if usage differs from the National IG.

VXU RXR notes

- The following fields are strongly encouraged for better data quality:
 - Route (RXR-1)
 - Administration Site (RXR-2)

VXU RXR example

RXR|C28161^Intramuscular^NCIT^IM^Intramuscular^HL70162|RD^Right Deltoid^HL70163|||

OBX – Observation Result Segment

Table 21. Local OBX field-level specifications in VXU messaging¹⁷

Seq	Element Name	Nat'l IG Cardinality	Nat'l IG Usage	Nat'l IG Conformance/ Value Set	Local Usage*	Local Conformance Notes
1	Set ID - OBX	[1..1]	R	Shall be valued sequentially starting with the value "1" within a message		
2	Value Type	[1..1]	R	See HL70125 (constrained)		
3	Observation Identifier	[1..1]	R	See NIP003		
4	Observation Sub-ID	[1..1]	R	Shall be a positive integer		

¹⁷ Derived from Table 5-7, Observation Segment and accompanying notes in the National IG.

5	Observation Value	[1..1]	RR			
6	Units	[0..1]	C(R/O)	If OBX-2 is valued "NM" then R, otherwise O		
7	References Range	[0..1]	O		X	
8	Abnormal Flags	[0..*]	O		X	
9	Probability	[0..1]	O		X	
10	Nature of Abnormal Test	[0..*]	O		X	
11	Observation Result Status	[1..1]	R	Shall contain the value "F"		
12	Effective Date of Reference Range Values	[0..1]	O		X	
13	User Defined Access Checks	[0..1]	O		X	
14	Date/Time of the Observation	[0..1]	RE			
15	Producer's Reference	[0..1]	O		X	
16	Responsible Observer	[0..*]	O		X	
17	Observation Method	[0..1]	C(RE/O)	If OBX-3.1 is "64994-7" then RE, otherwise O; See PNHV_FundingEligibilityObs Method_IIS		
18	Equipment Instance Identifier	[0..*]	O		X	
19	Date/Time of the Analysis	[0..1]	O		X	
23	Performing Organization Name	[0..1]	O		X	
24	Performing Organization Address	[0..1]	O		X	

25	Performing Organization Medical Director	[0..1]	O		X	
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*Only noted if usage differs from the National IG.

VXU OBX notes

- Clinics participating in the Vaccines for Children program must send Oregon-specific vaccine eligibility codes for all administered doses for all patients; use OBX-3 and OBX-5 to submit this information.
- OBX-5:
 - Reporting dose-level eligibility for a funding program: If the value of OBX-3.1 is '64994-7' and the value of OBX-2 is 'CE' then the value of OBX-5.1 shall be one of codes listed in User-Defined Table 0064, Financial Class. See [Appendix A](#) for accepted financial class codes.
 - Reporting VIS information: If the value of OBX-3.1 is '30956-7' and the value of OBX-2 is 'CE' then the value of OBX-5.1 shall be one of codes listed in the Value Set: CVX
- OBX-6: Conditional predicate: If OBX-2 is valued "NM"
- OBX-17: Conditional predicate: If OBX-3.1 is "64994-7"

VXU OBX example – dose-level funding eligibility

OBX|1|CE|64994-7^Vaccine funding program eligibility category^LN|1|V04^VFC eligible - American Indian/Alaskan Native^ALERTIIS|||||F|||20220422|||VXC40^Eligibility captured at the immunization level^CDCPHINVS|||||

OBX|1|CE|64994-7^Vaccine funding program eligibility category^LN|1|V05^VFC eligible - Federally Qualified Health Center Patient (under-insured)^HL70064|||||F|||20120701|||VXC40^Eligibility captured at the immunization level^CDCPHINVS

VXU OBX example – with VIS information

OBX|1|CE|30956-7^SINGLE VACCINE TYPE^LN|3|120^DTaP-Hib-IPV^CVX|||||F|||20220419|||||

OBX|2|DT|29769-7^DATE VACCINE INFORMATION STATEMENT PRESENTED^LN|4|20220419|||||F|||20220419|||||

OBX|3|DT|29768-9^DATE VACCINE INFORMATION STATEMENT PUBLISHED^LN|4|20210806|||||F|||20220419|||||

OBX|1|CE|30956-7^vaccine type^LN|1|88^Influenza, unspecified formulation^CVX|||||F
OBX|2|TS|29768-9^Date vaccine information statement published^LN|1|20120702|||||F
OBX|3|TS|29769-7^Date vaccine information statement presented^LN|1|20120814|||||F

VXU OBX example – reaction to vaccination

OBX|1|CE|31044-1^Reaction^LN|1|39579001^Anaphylaxis^SCT|||||F|||20170218

VXU OBX example – contraindication against vaccination

OBX|1|CE|30945-0^Vaccination contraindication^LN|1|91930004^Allergy to eggs
(disorder)^ALERTIIS|||||F|||20220425|||||||

OBX|1|CE|30945-0^Vaccination contraindication^LN|1|77386006^Patient Currently
Pregnant^SCT|||||F|||20200219

VXU OBX example – disease with presumed immunity

OBX|1|CE|59784-9^Disease with
presumed immunity^LN^^|4|371111005^Immunity: Measles^SCT^^|||||F|||20121219|||||20201231|||||

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 is a request for a complete immunization history and Z44 is a request for a request for an evaluated immunization history and forecast.

Local QBP segment specifications

Table 22 details segment-level specifications for QBP 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 as not supported locally (Local Usage of “X”) are ignored by the IIS.

Table 22. List of local QBP segment specifications (Z34 and Z44)¹⁸

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

*Only noted if different from the National IG.

QBP segment notes

- None

¹⁸ Derived from Table 7-3, Request Complete Immunization History and Table 11-4, Request Evaluated Immunization History and Forecast in the National IG.

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

The following tables detail field-level specifications for QBP messaging, in particular, the Z34 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 as not supported locally (Local Usage of “X”) are ignored by the IIS.

MSH – Message Header Segment

Table 23. Local MSH field-level specifications for QBP messaging, request complete immunization history (Z34)¹⁹

Seq	Element Name	Nat'l IG Cardinality	Nat'l IG Usage	Nat'l IG Conformance/ Value Set	Local Usage*	Local Conformance Notes
1	Field Separator	[1..1]	R	Shall be “ ”		
2	Encoding Characters	[1..1]	R	Shall be “^~\&”		
3	Sending Application	[0..1]	RE			
4	Sending Facility	[0..1]	RE			Shall be valued “ALERT IIS Organization ID (ALERT #)” Please work directly with your Oregon Onboarding Data Exchange Analyst for the correct organizational Identification Number
5	Receiving Application	[0..1]	RE		X	
6	Receiving Facility	[0..1]	RE		X	
7	Date/Time of Message	[1..1]	R	The degree of precision must be at least to the second, (format YYYYMMDDHHMMSS+/-ZZZZ)		

¹⁹ Derived from Table 7-4, MSH Specification for Request Complete Immunization History in the National IG.

8	Security	[0..1]	O		X	
9	Message Type	[1..1]	R	Shall be “QBP^Q11^QBP_Q11”		
10	Message Control ID	[1..1]	R			
11	Processing ID	[1..1]	R			
12	Version ID	[1..1]	R	Shall be “2.5.1”		
13	Sequence Number	[0..1]	O		X	
14	Continuation Pointer	[0..1]	O		X	
15	Accept Acknowledgment Type	[1..1]	R	Shall be “ER”		
16	Application Acknowledgment Type	[1..1]	R	Shall be “AL”		
17	Country Code	[0..1]	O		X	
18	Character Set	[0..1]	O		X	
19	Principal Language of Message	[0..1]	O		X	
20	Alternate Character Set Handling Scheme	[0..1]	O		X	
21	Message Profile Identifier	[1..*]	R	Shall be “Z34^CDCPHINVS”		
22	Sending Responsible Organization	[0..1]	RE			Shall be valued “ALERT IIS Organization ID (ALERT #)” Please work directly with your Oregon Onboarding Data Exchange Analyst for the correct organizational Identification Number

23	Receiving Responsible Organization	[0..1]	RE			
----	------------------------------------	--------	----	--	--	--

*Only noted if usage differs from the National IG.

QBP (Z34) MSH notes

- MSH-4: The clinic level code (AL#, provided by ALERT) must be sent in MSH-4. Ensure that each site has an established site agreement with ALERT IIS.
- MSH-9: Shall contain the constant value "QBP^Q11^QBP_Q11"
- MSH-21: Shall contain the value "Z34^CDCPHINVS"

QPD – Query Parameter Definition

Table 24. Local QPD field-level specifications for QBP messaging, request complete immunization history (Z34)²⁰

Seq	Element Name	Nat'l IG Cardinality	Nat'l IG Usage	Nat'l IG Conformance/ Value Set	Local Usage*	Local Conformance Notes
1	Message Query Name	[1..1]	R	Shall be "Z34^Request Immunization History^CDCPHINVS"		
2	Query Tag	[1..1]	R			
3	Patient List	[0..*]	RE			
4	Patient Name (PID-3)	[0..1]	RE			
5	Patient Mother Maiden Name (PID-6)	[0..1]	RE			
6	Patient Date of Birth (PID-7)	[0..1]	RE			
7	Patient Sex (PID-8)	[0..1]	RE	See HL70001		
8	Patient Address (PID-11)	[0..1]	RE			

²⁰ 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.

9	Patient Home Phone (PID-13)	[0..1]	RE			
10	Patient Multiple Birth Indicator (PID-24)	[0..1]	RE	See HL70136		
11	Patient Birth Order (PID-25)	[0..1]	RE			
12	Client Last Updated Date	[0..1]	O		X	
13	Client Last Update Facility	[0..1]	O		X	

*Only noted if usage differs from the National IG.

QBP (Z34) QPD notes

- None

RCP – Response Control Parameter

Table 25. Local RCP field-level specifications for QBP messaging, request complete immunization history (Z34)²¹

Seq	Element Name	Nat'l IG Cardinality	Nat'l IG Usage	Nat'l IG Conformance/ Value Set	Local Usage*	Local Conformance Notes
1	Query Priority	[0..1]	RE	Shall be "I"		
2	Quantity Limited Request	[0..1]	RE	See HL70126		
3	Response Modality		O		X	
4	Execution and Delivery Time		O		X	
5	Modify Indicator		O		X	
6	Sort-by Field		O		X	

²¹ Derived from Table 7-7, Response Control Parameter, and corresponding notes in the National IG.

7	Segment Group Inclusion		O		X	
---	-------------------------	--	---	--	---	--

*Only noted if usage differs from the National IG.

QBP (Z34) RCP notes

- RCP-1: Immediate priority is expected.
- RCP-2: This field may contain a maximum number of records that may be returned. The first component contains the count and the second contains “RD” for records.
 - ALERT IIS has a system limit of 10 maximum patients. If the value is 0 or >10, ALERT IIS will only send up to 10 patients.

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

The following tables detail field-level specifications for QBP messaging, in particular, the Z44 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 as not supported locally (Local Usage of “X”) are ignored by the IIS.

MSH – Message Header Segment

Table 26. Local MSH field-level specifications for QBP messaging, request evaluated immunization history and forecast (Z44)²²

Seq	Element Name	Nat'l IG Cardinality	Nat'l IG Usage	Nat'l IG Conformance/ Value Set	Local Usage*	Local Conformance Notes
1	Field Separator	[1..1]	R	Shall be “ ”		
2	Encoding Characters	[1..1]	R	Shall be “^~\&”		
3	Sending Application	[0..1]	RE			
4	Sending Facility	[0..1]	RE		X	Shall be valued “ALERT IIS Organization ID (ALERT #)”

²² Derived from Table 11-6, MSH Specifications for Requested Evaluated History and Forecast Immunization History Query and accompanying notes in National IG.

						Please work directly with your Oregon Onboarding Data Exchange Analyst for the correct organizational Identification Number
5	Receiving Application	[0..1]	RE		X	
6	Receiving Facility	[0..1]	RE			
7	Date/Time of Message	[1..1]	R	The degree of precision must be at least to the second, (format YYYYMMDDHHMMSS+/-ZZZZ)		
8	Security	[0..1]	O		X	
9	Message Type	[1..1]	R	Shall be "QBP^Q11^QBP_Q11"		
10	Message Control ID	[1..1]	R			
11	Processing ID	[1..1]	R			
12	Version ID	[1..1]	R	Shall be "2.5.1"		
13	Sequence Number	[0..1]	O		X	
14	Continuation Pointer	[0..1]	O		X	
15	Accept Acknowledgment Type	[1..1]	R	Shall be "ER"		
16	Application Acknowledgment Type	[1..1]	R	Shall be "AL"		
17	Country Code	[0..1]	O		X	
18	Character Set	[0..1]	O		X	
19	Principal Language of Message	[0..1]	O		X	

20	Alternate Character Set Handling Scheme	[0..1]	O		X	
21	Message Profile Identifier	[1..*]	R	Shall be "Z44^CDCPHINVS"		
22	Sending Responsible Organization	[0..1]	RE			
23	Receiving Responsible Organization	[0..1]	RE			

*Only noted if usage differs from the National IG.

QBP (Z44) MSH notes

- MSH-4: The clinic level code (AL#, provided by ALERT) must be sent in MSH-4. Ensure that each site has an established site agreement with ALERT IIS
- MSH-9: Shall contain the constant value "QBP^Q11^QBP_Q11"
- MSH-21: Shall contain the value "Z34^CDCPHINVS"

QPD – Query Parameter Definition

Table 27. Local QPD field-level specifications for QBP messaging, request evaluated immunization history and forecast (Z44)²³

Seq	Element Name	Nat'l IG Cardinality	Nat'l IG Usage	Nat'l IG Conformance/ Value Set	Local Usage*	Local Conformance Notes
1	Message Query Name	[1..1]	R	Shall be "Z44^Request Evaluated History and Forecast^CDCPHINVS"		
2	Query Tag	[1..1]	R			
3	Patient List	[0..*]	RE			
4	Patient Name (PID-3)	[0..1]	RE			

²³ Derived from Table 11-7, QPD Input Parameter Specification and 11-8, QPD Input Parameter Field Description and Commentary in the National IG and accompanying notes.

5	Patient Mother Maiden Name (PID-6)	[0..1]	RE			
6	Patient Date of Birth (PID-7)	[0..1]	RE			
7	Patient Sex (PID-8)	[0..1]	RE			
8	Patient Address (PID-11)	[0..1]	RE			
9	Patient Home Phone (PID-13)	[0..1]	RE			
10	Patient Multiple Birth Indicator (PID-24)	[0..1]	RE			
11	Patient Birth Order (PID-25)	[0..1]	RE			
12	Client Last Updated Date	[0..1]	O		X	
13	Client Last Update Facility	[0..1]	O		X	

*Only noted if usage differs from the National IG.

QBP (Z44) QPD notes

- None

RCP – Response Control Parameter

Table 28. Local RCP field-level specifications for QBP messaging, request evaluated immunization history and forecast (Z44)²⁴

Seq	Element Name	Nat'l IG Cardinality	Nat'l IG Usage	Nat'l IG Conformance/ Value Set	Local Usage*	Local Conformance Notes
1	Query Priority	[0..1]	RE	Shall be “I”		

²⁴ Derived from Table 11-9, RCP Response Control Parameter Field Description and Commentary and accompanying notes in the National IG.

2	Quantity Limited Request	[0..1]	RE	See HL70126		
3	Response Modality		O		X	
4	Execution and Delivery Time		O		X	
5	Modify Indicator		O		X	
6	Sort-by Field		O		X	
7	Segment Group Inclusion		O		X	

*Only noted if usage differs from the National IG.

QBP (Z44) RCP notes

- RCP-1: Immediate priority is expected.
- RCP-2: This field may contain a maximum number of records that may be returned. The first component contains the count and the second contains “RD” for records.
- Maximum number of records for ALERT IIS to return is 10. RCP-2 field should never be more than 10.

QBP (Z44) Example

REQUEST:

```
MSH|^~\&|MYEHR|ALXXXX^|ALERTIIS|ALERT IIS|20220420163956-
0300||QBP^Q11^QBP_Q11|43M1434901|T|2.5.1|||ER|AL||||Z44^CDCPHINVS||
QPD|Z44^Request Evaluated History and
Forecast^CDCPHINVS|43|600883317^^ALXXXX^MR~600883317^^MYEHR^MR|MOUSE^MICKY^^^^L|Duck^D
afflin^^^^M|20000412|F|ABC^AAA^ANYTOWN^OR^97301^USA^L|^PRN^PH^^458^1234567|Y|2||
RCP||10^RD&records&HL70126|R|
```

RESPONSE:

```
MSH|^~\&|ALERTIIS|ALERTIIS||ALXXXX|20220420134106-
0700||RSP^K11^RSP_K11|43M1434901|T|2.5.1|||NE|NE||||Z42^CDCPHINVS|ALERTIIS|ALXXXX
MSA|AA|43M1434901||0
```

QAK|43|OK|Z44^Request Evaluated History and Forecast^CDCPHINVS
 QPD|Z44^Request Evaluated History and
 Forecast^CDCPHINVS|43|600883317^^ALXXX^MR~600883317^^MYEHR^MR|MOUSE^MICKY^^^L|Duck^D
 afflin^^^M|20000412|F|ABC^AAA^ANYTOWN^OR^97301^USA^L|^PRN^PH^^458^1234567|Y|2
 PID|1||8012582^^ORA^SR~600883317^^ORA^MR||MOUSE^MICKY^^^L|DAFFLIN^^^L|20000412|F||1002-
 5^American Indian or Alaska
 Native^CDCREC|ABC^AAA^SALEM^OR^97301^P^^OR047|^PRN^H^^458^1234567||ENG|||||2135-2^Hispanic
 or Latino^CDCREC||N|0
 ORC|RE||138423788^ORA
 RXA|0|1|20220420|20220420|150^Flu quadrivalent injectable
 pfree^CVX|1.0|mL^^UCUM||00^^NIP001||^^OREGON CORVALLIS CLINIC|||77708||SKB^^MVX|||CP
 RXR|C28161^IM^NCIT|RD^RIGHT DELTOID^HL70163
 OBX|1|CE|38890-0^COMPONENT VACCINE TYPE^LN|1|88^Influenza-seasnl^CVX^90724^Influenza-
 seasnl^C4||||F
 OBX|2|NM|30973-2^Dose number in series^LN|1|999|NA^^HL70353||||F
 ORC|RE||138423606^ORA
 RXA|0|1|20220419|20220419|115^Tdap^CVX|1.0|mL^^UCUM||00^^NIP001||^^OREGON
 CLINIC|||777005||SKB^^MVX|||PA
 RXR|C28161^IM^NCIT|RD^RIGHT DELTOID^HL70163
 OBX|3|CE|38890-0^COMPONENT VACCINE TYPE^LN|1|139^Td/Tdap^CVX||||F
 OBX|4|NM|30973-2^Dose number in series^LN|1|777|NA^^HL70353||||F
 ORC|RE||138423609^ORA
 RXA|0|1|20220419|20220419|120^DTaP-IPV/Hib^CVX|1.0|mL^^UCUM||00^^NIP001||^^OREGON
 CLINIC|||77703||PMC^^MVX|||CP
 RXR|C28161^IM^NCIT|RD^RIGHT DELTOID^HL70163
 OBX|5|CE|38890-0^COMPONENT VACCINE TYPE^LN|1|17^Hib^CVX^90737^Hib^C4||||F
 OBX|6|NM|30973-2^Dose number in series^LN|1|777|NA^^HL70353||||F
 OBX|7|CE|38890-0^COMPONENT VACCINE TYPE^LN|2|89^Polio^CVX||||F
 OBX|8|NM|30973-2^Dose number in series^LN|2|1|NA^^HL70353||||F
 OBX|9|CE|38890-0^COMPONENT VACCINE TYPE^LN|3|139^Td/Tdap^CVX||||F
 OBX|10|NM|30973-2^Dose number in series^LN|3|1|NA^^HL70353||||F
 ORC|RE||9999^ORA
 RXA|0|1|20220420|20220420|998^No Vaccine Administered^CVX|999|||||||||NA

```
OBX|11|CE|30979-9^Vaccines Due Next^LN|1|213^COVID-19^CVX|||||F
OBX|12|TS|30980-7^Date Vaccine Due^LN|1|20050412|||||F
OBX|13|NM|30973-2^Vaccine due next dose number^LN|1|1|NA^^HL70353|||||F
OBX|14|TS|30981-5^Earliest date to give^LN|1|20050412|||||F
OBX|15|CE|30982-3^Reason applied by forecast logic to project this vaccine^LN|1|VXC16^ACIP
schedule^CDCPHINVS|||||F
OBX|16|CE|30979-9^Vaccines Due Next^LN|2|88^Influenza-seasn^CVX^90724^Influenza-seasn^C4|||||F
OBX|17|TS|30980-7^Date Vaccine Due^LN|2|20220701|||||F
OBX|18|NM|30973-2^Vaccine due next dose number^LN|2|3|NA^^HL70353|||||F
OBX|19|TS|30981-5^Earliest date to give^LN|2|20220701|||||F
OBX|20|CE|30982-3^Reason applied by forecast logic to project this vaccine^LN|2|VXC16^ACIP
schedule^CDCPHINVS|||||F
OBX|21|CE|30979-9^Vaccines Due Next^LN|3|03^MMR^CVX^90707^MMR^C4|||||F
OBX|22|TS|30980-7^Date Vaccine Due^LN|3|20010412|||||F
OBX|23|NM|30973-2^Vaccine due next dose number^LN|3|0|NA^^HL70353|||||F
OBX|24|TS|30981-5^Earliest date to give^LN|3|20010412|||||F
OBX|25|CE|30982-3^Reason applied by forecast logic to project this vaccine^LN|3|VXC16^ACIP
schedule^CDCPHINVS|||||F
```

ACK Messaging from the IIS

This section provides general information on what to expect in ACK messaging from the IIS. The ACK message is used to acknowledge receipt and processing of a submitted VXU message. It is also used to acknowledge and respond to queries (QBP messages) that cannot be processed to support response (RSP) messaging.

ALERT IIS sends an ACK or RSP message for every HL7 submission. If your organization is an EHR, IT department or other transporting agency please ensure that your end user (the clinic staff) receive and have visibility to these messages, as there is important information conveyed from the IIS.

If your organization is an immunization administrating agency, please develop a workflow process so that the ALERT ACK or RSP messages are reviewed and monitored on a regular basis.

The ACK message will contain one the following indicators which is key to know if the message has been successfully processed or not (listed in order of severity):

- AA - Application Accept – Good message with no problems. Mirrors the definition of AA in HL70008.
- AE - Application Error – One or more ERR segments returned with at most a severity of E for Error. Mirrors the definition of AA in HL70008.
- AR - Application Reject - this mirrors the definition of AR in HL70008.

Within an ACK message, review MSA-1 for a summary indication of the IIS processing response and sender follow-up expectations; see Table 29 for detail. Review ERR segment(s) within the ACK for further detail related to²⁵

- ERR-2 (Error Location) indicates the location of the error in the incoming message.
- ERR-3 (HL7 Error Code) indicates the nature of the HL7 (communication) error. Typically, these errors relate to issues with the format and technical content of the message rather than the clinical data in the message.
- ERR-4 (Severity) indicates if the error code being returned is informational, a warning or an error. The severity specifies the nature of the expected action in response to the error.
- ERR-5 (Application Error Code) indicates the nature of the error that occurred. Typically, these errors relate to issues with the clinical or administrative content of the message. Often, these errors are the result of applying local business rules to the data in the message.
- ERR-8 (User Message) transmits a text to further explain the nature of the error.

Table 29. ACK message interpretation and sender follow-up expectations²⁶

MSA-1 Value	Description	National IG Description	ERR Segment(s) and ERR-4 Severity	Interpretation of IIS Response	Sender Follow-up Expectation
AA	Application acknowledgement: 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.	Review information returned.

²⁵ Adapted from [National Error Code Set Guidance](#), AIRA

²⁶ Derived from [Guidance for HL7 ACK Messages to Support Interoperability](#), AIRA

AE	Application acknowledgement: 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 non-fatal 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 acknowledgement: 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. *

*If the cause of the issue is determined to be the sending system. In some cases, the issue may be due to the IIS; work with IIS staff to identify the cause of the issue and appropriate next steps.

Appendices

Appendix A. Usage Designations

Table 30. Usage designations²⁷

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 there is relevant data.	The receiving application SHALL process (save/print/archive/etc.) the information conveyed by a required but may be 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 operational requirements (usage code) of the element. If the condition predicate associated with the element is true, follow the rules for a which shall be one of "R", "RE", "O" or "X": If the condition predicate associated with the element is false, follow the rules for b which shall be one of "R", "RE", "O" or "X". a and b can be valued the same.	

²⁷ Derived from Table 3-2, Sending Application Conformance and Receiving Application Conformance, in the National IG

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.
O	Optional (The usage indicator for this element has not yet been defined)	N/A	N/A

Appendix B. Key Local Values and Codes

The following tables provide information about key values and codes accepted by the IIS as well as additional information about IIS processing and use of these values/codes.

Identifier type – User-defined Table 0203

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

Table 31. Identifier values²⁸

Value	Nat'l Description	Saved/stored by IIS?	Local Notes
BR	Birth Registry Number	Yes	
MA	Medicaid Number	Yes	
MC	Medicare Number	Yes	
MR	Medical Record Number	Yes	
PI	Patient Internal Identifier	Yes	
PN	Person Number	Yes	
PRN	Provider Number	Yes	
PT	Patient External Identifier	Yes	
RRI	Regional Registry ID	Yes	
SR	State Registry Identifier	Yes	
SS	Social Security Number	Yes	

Administrative sex – User-defined Table 0001

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

Table 32. Administrative sex values²⁹

Value	Nat'l Description	Saved/stored by IIS?	Local Notes
F	Female	Yes	

²⁸ See User-defined Table 0203 – Identifier type, within Appendix A of the National IG.

²⁹ See User-defined Table 0001 – Sex, within Appendix A of the National IG.

M	Male	Yes	
U	Unknown/ Undifferentiated	Yes	Submission of U will not overwrite an existing non-unknown value for a patient.
X		No	Not accepted at this time.

Race – User-defined Table 0005

Use in PID-10 to indicate patient race.

Table 33. Race values³⁰

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	
<empty field>	Unknown/Undetermined	Yes	Submission of an empty field will not overwrite an existing non-unknown value for a patient.

Ethnic group – CDCREC

Use in PID-22 to indicate patient ethnic group.

Table 34. Ethnic group values³¹

Value	Nat'l Description	Saved/stored by IIS?	Local Notes
2135-2	Hispanic or Latino	Yes	

³⁰ See User-defined Table 0005 – Race, within Appendix A of the National IG.

³¹ See CDCREC – Ethnic Group, within Appendix A of the National IG.

2186-5	Not Hispanic or Latino	Yes	Please Note: Oregon does NOT accept the X value at this time
	Unknown/Undetermined	No	

Immunization registry status – User-defined Table 0441

Use in PD1-16 to identify the status of the patient in relation to the sending provider organization.

Table 35. Immunization registry status values³²

Value	Nat'l Description	Saved/stored by IIS?	Local Notes
A	Active	Yes	
I	Inactive - Unspecified	Yes	
L	Inactive – Lost to follow-up (cannot contact)	Yes	
M	Inactive – Moved or gone elsewhere (transferred)	Yes	
P	Inactive – Permanently inactive (do not re-activate or add new entries to this record)	Yes	
U	Unknown	Yes	
O	Inactive – One Time Only	Yes	
S	Inactive – MOOSA	Yes	

Relationship – User-defined Table 0063

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

Table 36. Relationship values³³

Value	Nat'l Description	Saved/stored by IIS?	Local Notes
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³² See User-defined Table 0441 – Immunization registry status, within Appendix A of the National IG.

³³ See User-defined Table 0063 – Relationship, within Appendix A of the National IG.

ASC	Associate	Yes	
BRO	Brother	Yes	
CGV	Care giver	Yes	
CHD	Child	Yes	
DEP	Handicapped dependent	Yes	
DOM	Life partner	Yes	
EMC	Emergency contact	Yes	
EME	Employee	Yes	
EMR	Employer	Yes	
EXF	Extended family	Yes	
FCH	Foster child	Yes	
FND	Friend	Yes	
FTH	Father	Yes	
GCH	Grandchild	Yes	
GRD	Guardian	Yes	
GRP	Grandparent	Yes	
MGR	Manager	Yes	
MTH	Mother	Yes	
NCH	Natural child	Yes	
NON	None	Yes	
OAD	Other adult	Yes	
OTH	Other	Yes	
OWN	Owner	Yes	
PAR	Parent	Yes	
SCH	Stepchild	Yes	
SEL	Self	Yes	
SIB	Sibling	Yes	
SIS	Sister	Yes	
SPO	Spouse	Yes	
TRA	Trainer	Yes	

UNK	Unknown	Yes	
WRD	Ward of court	Yes	

Eligibility – User-defined Table 0064

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

Table 37. Eligibility codes³⁴

Code	Label	Nat'l Description	Saved/ stored by IIS?	Local Notes
V01	Not VFC eligible	Client does not qualify for VFC because they do not have one of the statuses below (V02-V05).	Yes	
V02	VFC eligible – Medicaid/ Medicaid Managed Care	All of 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	
V03	VFC eligible - uninsured	All of 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	
V04	VFC eligible –	All of the following are true:	Yes	

³⁴ See User-defined Table 0064 – Financial class, within Appendix A of the National IG.

	American Indian/ Alaskan Native	<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 		
V05	VFC eligible – underinsured at FQHC/RHC/deputized provider	<p>All of the following are true:</p> <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 Client is < 19 years old The type of vaccine administered is eligible for VFC funding 	Yes	
V07	Other State-supplied, 317 funds	<p>All of the following are true:</p> <ul style="list-style-type: none"> Client has no insurance or has insurance that does not cover vaccines, limits the vaccines covered or caps vaccine coverage at a certain amount Client is 19 + years old The type of vaccine administered is 317-funded 	Yes	
ORA01	Special project	*Oregon Specific Code	Yes	This is an Oregon State specific code used for Special Projects.
ORA02	Locally owned	*Oregon Specific Code	Yes	This is an Oregon State specific code that should be used for as

				“Locally Owned”. This code should only be used by publicly funded and operated facilities, such as LPHD (Local Public Health Departments).
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Appendix C. Sample Messages

Sample VXU messages

Administered

MSH|^~\&|MYEHR|ALXXXX OREGON CLINIC|
ALERTIIS||202204191819||VXU^V04^VXU_V04|13M1434901|T|2.5.1|||ER|AL||||Z22^C
DCPHINVS||
PID|1||600883317^^ALXXXX^MR~540544111^^USSSA^SS||MOUSE^MICKY^^^L^L
|Dafflin^^^^^M|20000412|F||1002-5^American Indian or Alaska
Native^CDCREC|ABC^AAA^ANYTOWN^OR^97301^USA^P||^PRN^PH^^458^123456
7~^^|eng^English^HL70296|S^S^HL70002|||||2135-2^Hispanic or
Latino^CDCREC||Y|2||||N
PD1|||||||01^No reminder/recall^HL70215|N|20220415|||A|20220415|20220419
ORC|RE|18586234H1434901^MyEHR|18586234H1434901^MyEHR|||||^Doctor^Best^^
^^^L^^|1588607600^Best^Doctor^MD^Dr.^L||||1649227265^OREGON
CLINIC^NPI|||||
RXA|0|1|20220419|20220419|150^influenza, injectable, quadrivalent, preservative
free^CVX|.5|mL^mL^UCUM||00^NEW IMMUNIZATION
RECORD^NIP001|^DOCTOR^BEST^^^^^L^^|ALXXXX^OREGON CLINIC.^123
OREGON
STREET,ANYTOWN,OR^^ALXXXX||||77701|20230414|SKB^GlaxoSmithKline^MVX|^||
CP|A|
RXR|C28161^Intramuscular^NCIT^IM^Intramuscular^HL70162|RD^Right
Deltoid^HL70163|||
OBX|1|CE|64994-7^Vaccine funding program eligibility category^LN|1|V01^Not VFC
Eligible^ALERTIIS|||||F||20220419||VXC40^Eligibility captured at the immunization
level^CDCPHINVS|||||||

Historical

MSH|^~\&|MYEHR|ALXXXX^OREGON CLINIC|ALERTIIS|ALERT
IIS|202204201650||VXU^V04^VXU_V04|45M1434901|T|2.5.1|||ER|AL||||Z22^CDCPHIN
VS||
PID|1||600883317^^ALXXXX^MR~540544111^^USSSA^SS||MOUSE^MICKY^^^L^L
|Dafflin^^^^^M|20000412|F||1002-5^American Indian or Alaska
Native^CDCREC|ABC^AAA^ANYTOWN^OR^97301^USA^P||^PRN^PH^^458^123456
7~^^|eng^English^HL70296|S^S^HL70002|||||2135-2^Hispanic or
Latino^CDCREC||Y|2||||N
PD1|||||||01^No reminder/recall^HL70215|N|20220415|||A|20220420|20220420
ORC|RE|1611274PV1434901^myehr|1611274PV1434901^myehr|||||^Best^Doctor^^
^^L^^|^^^^^||||1649227265^OREGON CLINIC^NPI|||||
RXA|0|1|20211216|20211216|115^Tdap^CVX|.5|mL^mL^UCUM||01^HISTORICAL
INFORMATION - SOURCE
UNSPECIFIED^NIP001|^^^^^^^^^^|^^ALXXXX||||27481|20220715|SKB^GlaxoSmith
Kline^MVX|^||CP|A

Sample QBP messages

Request complete immunization history (Z34)

```
MSH|^~\&|MYEHR|ALXXXX|ALERTIIS|^ISO|20211115141222||QBP^Q11^QBP_Q11|  
000000116|P|2.5.1|||NE|AL||||Z34^CDCPHINVS|ALXXXX  
QPD|Z34^Request Immunization  
History^HL70471|1000110092|U1000110092^^^MR|Tester^Hobbs^^^^L||20000702|M  
|999 E BUTLER PLACE^PORTLAND^OR^97035^L  
RCP|||20^RD
```

Request evaluated immunization history and forecast (Z44)

```
MSH|^~\&|MYEHR|ALXXXX^OREGON CLINIC|ALERTIIS||20220420163956-  
0300||QBP^Q11^QBP_Q11|43M1434901|T|2.5.1|||ER|AL||||Z44^CDCPHINVS||  
QPD|Z44^Request Evaluated History and  
Forecast^CDCPHINVS|43|600883317^^ALXXXX^MR~600883317^^MYEHR^MR|MO  
USE^MICKY^^^^L|Dafflin^^^^M|20000412|F|ABC^AAA^ANYTOWN^OR^97301^US  
A^L|^PRN^PH^^458^1234567|Y|2||  
RCP|||10^RD&records&HL70126|R|
```

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 transport of immunization data via HL7 messaging.
- [Immunization Data Code Sets](#)
CDC webpage with current immunization-related code sets from the CDC. Included 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](#)
Trainings, learning solutions and resources from the Public Health Informatics Institute for public health staff and partners supporting and using IIS. Includes eLearning modules on Fundamentals of IIS (addressing interoperability and HL7) and Advanced HL7. Also includes Quick Reference Guides on [Breaking Down an HL7 Message](#), [HL7 Messaging Acronyms](#), [HL7 Message Profiles](#), and [HL7 Conformance Specification Parameters](#).