

MIIC HL7 2.3.1 and HL7 2.4 Specifications

SUBMITTING VXU MESSAGES

For Meeting Meaningful Use Stage 1 Reporting to Immunization Information Systems. Based on CDC HL7 Version 2.3.1, Version 2.2

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Introduction

Purpose

The purpose of this document is to provide a concise guide to the Health Level 7 (HL7) 2.3.1 and 2.4 messages accepted by the Minnesota Immunization Information Connection (MIIC), specifically, the VXU, Unsolicited Vaccination Record Update. HL7, or Health Level Seven, is a standard messaging protocol used to exchange data between health care data systems. Providers must follow these specifications to receive Meaningful Use incentive payments for Stage 1 reporting to immunization information systems.

The audience for the document is the technical staff responsible for creating the HL7 files from within their EHR system or by some other extract program in order to submit HL7 messages to MIIC. This is not a comprehensive overview of HL7 specifications. For the full HL7 specification guide, refer to Centers for Disease Control and Prevention's (CDC) IIS Health Level 7 (HL7) Implementation (https://www.cdc.gov/vaccines/programs/iis/technical-guidance/hl7.html). Note: Some of the MIIC requirements are more stringent than those in the CDC HL7 guide.

All organizations interested in initiating or enhancing a data interface with MIIC should refer to Process for Working on Data Exchange with MIIC
(https://www.health.state.mn.us/people/immunize/miic/data/dxprocess.html).

2.3.1 and 2.4 Specifications

MIIC currently supports version 2.3.1 of HL7, along with a "blend" of 2.4. In reality, the MIIC 2.4 messages are the same as 2.3.1, except that messages submitted with 2.4 can be processed "real-time" and also use some code sets from the 2.4 standard, namely race/ethnicity.

For clinics that decide to submit real-time messages, they will have to indicate 2.4 in the version ID field (MSH-12). It should be noted, however, that since MIIC's real-time 2.4 HL7 messaging is just 2.3.1 with pre-opted code sets from 2.4, that any message received with 2.4 in the version field will meet the Meaningful Use rules for Stage 1.

Rows highlighted blue and marked required (R) must be submitted to MIIC

Rows highlighted yellow are required (RE) but maybe empty and should be submitted if information is available and field is applicable

- MIIC strongly recommends the collection and submission of these data elements to ensure good data de-duplication and data quality in MIIC

Rows highlighted in violet are conditional (C), which means that value is required if the field it is related to contains a specific value

Non-highlighted rows are optional (O). Data may be sent if you have it, but MIIC may not process it

Rows highlighted in gray (X) are deprecated and data should not be sent in this portion of the message

Reference and Code Tables

Code tables referenced in this specification can be found online at MIIC Codes for Data Submission and Exchange (www.health.state.mn.us/people/immunize/miic/data/codes.html).

Refer to <u>Submitting and Exchanging Data with MIIC</u> (<u>www.health.state.mn.us/people/immunize/miic/data/index.html</u>) for additional information on MIIC specifications, Meaningful Use Incentives and MIIC, HL7 transport options, and MIIC-accepted code sets.

Detailed Segment Listings

MSH – Message Header

The Message Header segment identifies the owner (provider) and the receiver (MIIC) of the information being sent, the HL7 message type, and the HL7 message version.

	MSH Segment (Required)				
Field	Description	Required	Value/Comment	Code Table	
1	Field separator	R	The character to be used as the field separator for the rest of the message ().		
2	Encoding characters	R	Four characters in the following order: the component separator, repetition separator, escape character, and subcomponent separator (^~\&).		

3	Sending application	0	MIIC disregards	
4	Sending facility	R	MIIC organization code (short name). Facility-specific code provided by MDH for each clinic. Designates the clinic location the vaccine was administered/recorded. Provider HL7 data submissions to MIIC must include ALL site-specific organization codes. This is important for reporting, follow-up and outreach. (E.g., CCAD).	
5	Receiving application	RE	MIIC	
6	Receiving facility	RE	MIIC	
7	Date/time of message	RE	YYYYMMDDhhmm(E.g., 201405130822)	
8	Security	0	MIIC disregards	
9	Message type	R	Unsolicited Vaccination Update (VXU^V04)	HL7-Defined 0076
10	Message control ID	R	Unique ID for message – usually test case number + 100	
11	Processing ID	R	Always use 'P' for production.	HL7-Defined 0103
12	Version ID	R	'2.3.1' or '2.4'	HL7-Defined 0104
13	Sequence number	0	MIIC disregards	
14	Continuation pointer	0	MIIC disregards	
15	Accept acknowledgement type	RE	MIIC recommends submission	HL7-Defined 0155
16	Application acknowledgement type	RE	Value shall be AL-always, NE-Never, ER-Error/reject only, SU successful completion only • MIIC recommends using 'AL' or 'ER' • If left blank, MIIC will auto-populate with 'AL'	HL7-Defined 0155 (constrained)

17	Country code	0	MIIC disregards	
18	Character set	0	MIIC disregards	
19	Principal language of message	0	MIIC disregards	
20	Alternate character set handling	0	MIIC disregards	

Example

PID - Patient Identification

The Patient Identification segment includes client identifiers such as name, date of birth, address, etc.

	PID Segment (Required)				
Field	Description	Required	Value/Comment	Code Table	
1	Set ID – PID	0	MIIC disregards		
2	Patient ID	0	MIIC disregards		
3	Patient identifier list	R	Medical record; stored as chart number in MIIC. (ID^^^^MR^^^^)	User-Defined 0203	
4	Alternate patient ID — PID	0	MIIC disregards		
5	Patient name		All three elements are required. MIIC does not accept placeholder names such as "Baby" and "Baby Boy." (Last^First^Middle^Suffix^^^)		
	Mother's maiden name		This is used in client de-duplication. (Mother's maiden last^Mother's maiden first^^^^^)		

7	Date of birth	R	Client's birth date (YYYYMMDD).	
8	Gender	RE	Client's gender (F/M/O/U).	User-Defined 0001
9	Patient alias	0	MIIC disregards	
10	Race	RE	Client's race.	User-Defined 0005
11	Patient Address	RE	Client's address; Incoming address is assumed as the patient's primary address. (Street address^other^city^state^zip^^^^^)	
12	County code	RE	Client's county of residence. (E.g., 'MN019')	User-Defined 0289
13	Phone number (home)	RE	Client's home phone number ((NNN)NNN- NNNN^^^^^^).	
14	Phone number – business	0	MIIC disregards	
15	Primary language	0	MIIC disregards	
16	Marital status	0	MIIC disregards	
17	Religion	0	MIIC disregards	
_	Patient account number	0	MIIC disregards	
19	SSN number – patient	Х	MIIC disregards. DO NOT SEND.	
20	Driver's license number – patient	0	MIIC disregards	

21	Mother's identifier	0	MIIC disregards				
22	Ethnic group	RE	,	User-Defined 0189			
23	Birth place	RE	numeric county code				
24	Multiple birth indicator	RE	, , , , , ,	HL7-Defined 0136			
25	Birth order	RE	Use '1' for the first born, '2' for the second etc.				
26	Citizenship	0	MIIC disregards				
27	Veterans military status	0	MIIC disregards				
28	Nationality	0	MIIC disregards				
29	Patient death date	RE	Date of death if client is deceased (YYYYMMDD).				
30	Patient death indicator	0	MIIC disregards				
Exam	Example						

PID|1||12345678^^^MR||Mouse^Mickey^J^III^^^|cat^martha|20060504|M||W|12345 testing ave^^St. Peter^MN^56082^^^^MN103||(555)555-5555|||||||NH||N||||N

PD1 – Additional Patient Demographics

The patient additional demographic segment contains additional information related to the client. The PD1 segment is optional; if used, Publicity Code, Protection Indicator, and Registry Status should be sent.

	PD1 Segment (Optional) 2.3.1 and 2.4, fields 1-12				
Field	Description	Required	Value/Comment	Code Table	
1	Living dependency	0	MIIC disregards		
2	Living arrangement	0	MIIC disregards		
3	Patient primary facility	0	MIIC disregards		
4	Patient primary care provider name % ID	0	MIIC disregards		
5	Student indicator	0	MIIC disregards		
6	Handicap	0	MIIC disregards		
7	Living will	0	MIIC disregards		
8	Organ donor	0	MIIC disregards		
9	Separate bill	0	MIIC disregards		
10	Duplicate patient	0	MIIC disregards		
11	Publicity Code	RE	Controls whether recall/reminder notices are sent. Default value is '02' (reminder/recall – any method).	User-Defined 0215	
12	Protection indicator	RE	Controls visibility of records to other organizations. Default value is blank. 'Y' indicates that a client has given consent to share data with MIIC.	HL7-Defined 0136	
		ا	PD1 Segment 2.3.1, fields 13-18		
13	Reserved for 2.3.2	0	MIIC disregards		
14	Patient registry status	RE	For use in 2.3.1 only (A/N/L/M/P).	User-Defined 0441	
15	Patient registry status effective date	0	MIIC disregards		
16	N/A	0	MIIC disregards		
17	N/A	0	MIIC disregards		

18	N/A	0	MIIC disregards			
	PD1 Segment 2.4.1, fields 13-18					
13	Protection indicator effective date	0	MIIC disregards			
14	Place of worship	0	MIIC disregards			
15	Advance directive code	0	MIIC disregards			
16	Patient registry status	RE	For use in 2.4 only (A/I/L/M/O/U/P).	User-Defined 0441		
17	Immunization registry status effective date	0	MIIC disregards			
18	Publicity code effective date	0	MIIC disregards			
Example						
PD1 02 Y A						

NK1 – Next of Kin/Associated Parties

The NK1 segment contains information about the client's next of kin and other associated or related parties. The NK1 segment is optional; if used, fields 1-5 should be sent.

		NK1 Segment (Optional)				
I	ield	Description	Required	Value/Comment	Code Table	
	1	Set ID – NK1		Sequential numbers. Use '1' for the first NK1 within the message, '2' for the second, and so forth.		
	2	Name		Name of the responsible person who cares for the client. (Next of kin last^next of kin first^^^^)		

3	Relationship		Relationship of the responsible person to the client. If no relationship is sent, it will default to Self. (E.g., 32^Mother^HL70063^^^^^^)	User-Defined 0063
4	Address	RE	Responsible person's mailing address. (Street number^street name^city^state^zip code^^^^^)	
5	Phone number	RE	Responsible person's phone number. ((NNN)NNN- NNNN^^^^^^)	
6	Business phone number	0	MIIC disregards	
7	Contact role	0	MIIC disregards	
8	Start date	0	MIIC disregards	
9	End date	0	MIIC disregards	
10	Next of kin/AP job title	0	MIIC disregards	
11	Next of kin/AP job code/class	0	MIIC disregards	
12	Next of kin/AP employee number	0	MIIC disregards	
13	Organization name	0	MIIC disregards	
14	Marital status	0	MIIC disregards	
15	Sex	0	MIIC disregards	
16	Date/time of birth	0	MIIC disregards	
17	Living dependency	0	MIIC disregards	

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18	Ambulatory status	0	MIIC disregards	
19	Citizenship	0	MIIC disregards	
20	Primary language	0	MIIC disregards	
21	Living arrangement	0	MIIC disregards	
22	Publicity code	0	MIIC disregards	
23	Protection indicator	0	MIIC disregards	
24	Student indicator	0	MIIC disregards	
25	Religion	0	MIIC disregards	
26	Mother's maiden name	0	MIIC disregards	
27	Nationality	0	MIIC disregards	
28	Ethnic group	0	MIIC disregards	
29	Contact reason	0	MIIC disregards	
30	Contact person's name	0	MIIC disregards	
31	Contact person's telephone number	0	MIIC disregards	
32	Contact person's address	0	MIIC disregards	
33	Next of kin/AP's identifiers	0	MIIC disregards	
34	Job status	0	MIIC disregards	

35	Race	0	MIIC disregards	
36	Handicap	0	MIIC disregards	
	Contact person social security #	0	MIIC disregards	

Example

NK1|1|MOUSE^MINNIE|SPO^Spouse^HL70063|12345 testing ave^^St. Peter^MN^56082^^^^MN103|(555)555-5555

PV1 - Patient Visit Information

The PV1 segment contains visit-specific information. The PV1 segment is currently optional; if used, Patient Class and Financial Class are required fields. This segment will be required once vaccine ordering is implemented into MIIC to track patients' MnVFC status. If you send funding eligibility codes in the PV1 they will only apply to vaccinations that do not have a corresponding OBX funding eligibility code sent.

	PV1 Segment (Optional)					
Field	Description	Required	Value/Comment	Code Table		
1	SET ID – PV1	0	MIIC disregards			
2	Patient class		, ,	User-Defined 0004		
3	Assigned patient location	0	MIIC disregards			
4	Admission type	0	MIIC disregards			
5	Pre-admit number	0	MIIC disregards			
6	Prior patient number	0	MIIC disregards			

7	Attending doctor	0	MIIC disregards	
8	Referring doctor	0	MIIC disregards	
9	Consulting doctor	0	MIIC disregards	
10	Hospital service	0	MIIC disregards	
11	Temporary location	0	MIIC disregards	
12	Pre-admit test indicator	0	MIIC disregards	
13	Re-admission indicator	0	MIIC disregards	
14	Admit source	0	MIIC disregards	
15	Ambulatory status	0	MIIC disregards	
16	VIP indicator	0	MIIC disregards	
17	Admitting doctor	0	MIIC disregards	
18	Patient type	0	MIIC disregards	
19	Visit number	0	MIIC disregards	
20	Financial class	RE	Iroimhurcomant cuch as Vassinas for Children aligibility 1	User-Defined 0064
21	Charge price indicator	0	MIIC disregards	
22	Courtesy code	0	MIIC disregards	
23	Credit rating	0	MIIC disregards	
24	Contract code	0	MIIC disregards	

25	Contract effective date	0	MIIC disregards	
26	Contract amount	0	MIIC disregards	
27	Contract period	0	MIIC disregards	
28	Interest code	0	MIIC disregards	
29	Transfer to bad debt code	0	MIIC disregards	
30	Transfer to bad debt date	0	MIIC disregards	
31	Bad debt agency code	0	MIIC disregards	
32	Bad debt transfer amount	0	MIIC disregards	
33	Bad debt recovery amount	0	MIIC disregards	
34	Delete account indicator	0	MIIC disregards	
35	Delete account date	0	MIIC disregards	
36	Discharge disposition	0	MIIC disregards	
37	Discharged to location	0	MIIC disregards	
38	Diet type	0	MIIC disregards	
39	Servicing facility	0	MIIC disregards	
40	Bed status	0	MIIC disregards	
41	Account status	0	MIIC disregards	
	-			

42	Pending location	0	MIIC disregards		
	Prior temporary location	0	MIIC disregards		
44	Admit date/time	0	MIIC disregards		
45	Discharge date/time	0	MIIC disregards		
	Current patient balance	0	MIIC disregards		
47	Total charges	0	MIIC disregards		
48	Total adjustments	0	MIIC disregards		
49	Total payments	0	MIIC disregards		
50	Alternate visit ID	0	MIIC disregards		
51	Visit indicator	0	MIIC disregards		
	Other healthcare provider	0	MIIC disregards		
Exam	Example				
PV1	PV1 R V00				

RXA – Pharmacy Administration

The RXA segment carries pharmacy administration data such as the date of vaccination, type of vaccine administered, vaccine lot number, and vaccine manufacturer.

	RXA Segment (Required)				
Field	Description	Required	Value/Comment	Code Table	

1	Give sub-ID counter	R	Always use '0'	
2	Administration sub-ID counter	R	Always use '999' (because dose number not retained).	
3	Date/time start of administration	R	Date the vaccine was given. (YYYYMMDD)	
4	Date/time end of administration	R	Date the vaccine was given. (YYYYMMDD)	
5	Administered code	R	Identifies the vaccine administered. CVX codes should be used in the first triplet to code this field. The second set of three components could be used to represent the same vaccine using a different coding system, such as CPT. (141^Influenza^CVX^90658^FluLaval >= 3 yrs^CPT)	HL7-Defined 0292
6	Administered amount	R	Quantity of vaccine administered in milliliters. Send '0' if unknown.	
7	Administered units	RE	If Administered Amount is not valued, use '999'	
8	Administered dosage form	0	MIIC disregards	
9	Administration notes	R		NIP-Defined 001
10	Administering provider	RE	Identifies the name of the person physically administering the vaccine.	
11	Administered-at location	RE	MIIC will use this field to store the site where the vaccine was administered (for historical vaccinations).	

12	Administered per (time unit)	0	MIIC disregards	
13	Administered strength	0	MIIC disregards	
14	Administered strength units	0	MIIC disregards	
15	Substance lot number	R	Manufacturer's lot number for the vaccine. String with length of 20.	
16	Substance expiration date	RE	(YYYYMMDD)	
17	Substance manufacturer name	R		HL7-Defined 0227
18	Substance refusal reason	RE	The vaccine that was offered should be recorded in	NIP-Defined 002
19	Indication	0	MIIC disregards	
20	Completion status	0	MIIC disregards	
21	Action code-RXA	RE	'A' (Add) or 'D' (Delete) or 'U' (Update – treated as Add by MIIC)	
22	System entry date /time	RE	(YYYYMMDD)	

Example

RXR - Pharmacy/Treatment Route

The RXR segment indicates the route and site of vaccine administration.

	RXR Segment (Optional)				
Field	Description	Required	Value/Comment	Code Table	
1	Route	R	,	HL7-Defined 0162	
2	Site	RE	(3, ,	HL7-Defined 0163	
3	Administration device	0	MIIC disregards		
	Administration method	0	MIIC disregards		
5	Routing instruction	0	MIIC disregards		
	xample XR IM LD				

OBX - Observation/Result

The OBX segment is used to record vaccine contraindications, precautions, immunity, exemptions, and reactions. If you send dose level funding eligibility codes in the OBX they will take priority, for that vaccination, over any funding eligibility codes you send in the PV1 segment.

	OBX Segment (Optional)				
Field	Description	Required	Value/Comment	Code Table	
1	Set ID-OBX	0	MIIC disregards		
2	Value type	R	Always use 'CE'		
3	Observation Identifier	R, if applicable	To send contraindications: Contains a unique identifier for the observation. The format is that of the Coded Element (CE). • [30945-0^contraindication^LN This indicates what this observation refers to. It poses the question that is answered by OBX-5. Value sets: NIP003 To send vaccine-level funding eligibility: Contains a unique identifier for the observation. The format is that of the Coded Element (CE). • [64994-7^funding pgm eligibility^LN This indicates what this observation refers to. It poses the question that is answered by OBX-5. Value sets: NIP003	LOINC is standard coding for this field if an appropriate LOINC code exists.	
4	Observation sub-ID	0	MIIC disregards		
5	Observation value	R, if applicable	in OBX-2 and the observation identifier specified in OBX-3. Examples:	NIP-Defined 002 NIP-Defined 004	

shot. Derived Mea	ee also MIIC- efined: nmunity, edical emption, ontraindicati
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Sample Message

MSH|^~\&|TestEHRApplication|testSite|MIIC|MIIC|201405130822||VXU^V04|test1100|P|2 .3.1|||AL|AL PID|1||12345678^^^MR||Mouse^Mickey^J^III^^^|cat^martha|20060504|M||W|12345 testing ave^^St. Peter^MN^56082^^^MN103||(555)555-5555|||||||NH||N||||N PD1||||||||02|Y||||A NK1|1|MOUSE^MINNIE|SPO^Spouse^HL70063|12345 testing ave^^St. Peter^MN^56082^^^MN103|(555)555-5555 PV1||R|||||||||||||V00 $RXA|0|1|20120916|20120916|141^{Influenza^{CVX^90658^{FluLaval}}} >= 3$ yrs^CPT|1|mL||00|||||ABC1234|20201201|SKB^GlaxoSmithKline^MVX||||A|20140513 RXR|IM|LD OBX|1|CE|30945-0^contraindication^LN|1|M4^Medical exemption: Influenza^NIP|||||F|||20120916 OBX|2|CE|64994-7^funding pgm eligibility^LN|2|V04^VFC eligible NA/AN^HL70064|||||F|||20130916|||VXC40^per immunization^CDCPHINVS|

MIIC Help

For assistance with MIIC HL7 2.3.1 AND 2.4 VXU specifications, you can send an email to the MIIC Help Desk using the "help desk" button on MIIC for any additional questions or use the light bulb icon to access additional user guidance resources.



health.miichelp@state.mn.us www.health.state.mn.us

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To obtain this information in a different format, call: 651-201-5207.