



The Citywide Immunization Registry (CIR) HL7 Onboarding Guide

Please review this HL7 onboarding checklist if your organization:

- Administers vaccines within New York City’s five boroughs
- And/or would like to query patient immunization histories within our jurisdiction
- Or participates in the COVID Vaccine program, VFC program, and/or Promoting Interoperability EHR Incentivized programs for the immunization registry public health measure
- Or is already connected with the CIR but switching EHR vendors

For additional technical guidance, please refer to the [CIR HL7 Web Service Implementation Guide \(IG\) v 1.5](#).

1. CIR FACILITY CODE REGISTRATION

Is your facility or facilities registered with the CIR?

YES – please list the CIR facility code, facility name, address and primary provider. Add more rows if needed. This helps the CIR keep your facility information up to date.

CIR Administering Facilities - All locations registered with the CIR		
CIR Administering Facility Code	Administering Facility Name - Address	Default Providers: Provider Name MD - License Number

NO – Go to the [online registration page](#) to register your facility(ies) for the first time or to update an existing registration if your facility has not reported to the CIR in over a year. You will need the National Provider Identifier (NPI) number and NYS medical license number of the provider-in-charge to complete the registration. After completing registration, you should receive two automated emails, one with the registration confirmation, and the second with the CIR facility code. Please add your email address as a contact in the registration application so that you may receive these automated emails.

2. CONFIDENTIALITY FORM

Prior to exchanging data with the CIR, a completed confidentiality form is required. Please email your assigned CIR Interoperability specialist and/or cir_interop@health.nyc.gov a signed copy.

Submitted (Yes, No, Not applicable)	Confidentiality forms
	Every facility is required to complete a copy of the CIR’s Health Care Provider Confidentiality Statement (PDF).
	If your EHR has not worked with CIR before, EHR Vendor is required to sign a copy of the CIR's Vendor Confidentiality Statement (PDF).



3. ONBOARDING QUESTIONS

These onboarding questions give us a complete picture about your organization's reasons to connect with the CIR. If your practice already uses an EHR that has already been onboarded with the CIR, the EHR vendor questions may be skipped.

Answer	Facility Questions
	1. Does your practice administer immunizations?
	Does your practice participate in the COVID vaccine program?
	Does your practice participate in the Vaccines for Children program?
	Does your practice see adults only (19+)?
	Does your practice see children only?
	Does your practice see both adults and children?
	2. Is your practice interested in submitting vaccinations only or also query patient immunization history (bidirectionality)? Or query only?
	3. Will you be attesting to the Immunization Registry Reporting Measure for any Medicaid or Medicare Incentivized Programs (MU)?
	4. If participating in MU, are you registered in the Meaningful Use Public Health Reporting (MURPH) system?
	5. Approximately how many immunizations and or query requests will come through this interface monthly? Is there interest in querying in batches/for all your patients or members?
	6. If your practice administers adult vaccines, do you collect adult patient consent for sharing data with the CIR?
Answer	EHR/Interface Vendor Questions
	1. How many NYC clients will you be connecting to the CIR? (For a new EHR vendor to the CIR)
	2. Can sending dose-level VFC funding eligibility information to us through this interface? (OBX-3 '64994-7' and OBX-5 'V02-Medicaid')
	3. Can your EHR also report the vaccine funding source? Able to report publicly funded vaccines versus privately funded vaccines? (VXC50 and PHC70)
	4. Can your EHR send NDC codes with CVX codes for newly administered vaccines? Can your EMR send more than one vaccine code identifier?
	5. Do you have interfaces with other immunization registries? For example, NYSIIS.
	a. If so, please list other registries:
	6. Does the EHR have bidirectional functionality?
	a. If so, can your EHR also provide decision support and recommendations or only display immunization history?
	7. Will this interface be directly between your EHR and CIR or will the data go through an intermediary system or 3rd party interface engine product like Ensemble, MIRTH, Qvera?
	8. Will the interface consume ACKs sent in CIR response messages?
	a. If so, can you and or the end user review the ACK messages with errors and/or failures?
	9. If you make any changes at the vendor-level, can you push changes out to all clients at once? Are there functionalities that need to be enabled for the client? (Adult patient consent, invalid doses, CVX codes/NDC codes, value mapping tables). If not, you must test for each client.
	10. Can the EHR delete and resubmit HL7 VXU messages?
	11. Is the EHR able to send historical immunizations with IIS ID in RXA-11.4 (administering location)?
	12. Is your EHR 2015 ONC Certified?
	13. Does your EHR support clients participating in MU 3 - promoting interoperability programs?
	14. Does your EHR use the latest TLS 1.2 encryption protocol?
	15. Is data transmitted in real-time or in daily batch?
	16. If reporting, does your system collect adult protection indicator?

4. KICK-OFF CALL

Contacts

CIR would like to help support you and your organization in this immunization onboarding project. Please fill this out during the kick-off call to set-up communication workflow, schedule meetings, and deadlines. This time is also used to review testing requirements and sharing credentials.

Role	Organization	Name	Contact
Director/Facility Manager	Facility Name		
EHR Project Manager	EHR Name		
EHR Interface Engineer	EHR Name		
Assigned CIR Informatics Analyst	DOHMH CIR		
CIR Interop Team	DOHMH CIR		cir_interop@health.nyc.gov
CIR Interop Team Lead	DOHMH CIR		

Interface Set-up

Use the kick-off call to discuss with the EHR vendor technical liaison or interface analyst how the HL7 connection will be. This is crucial to ensure proper guidance for the interface testing as the CIR has (2) Interface setups the CIR offers.

1. Point-to-Point Interface - A point-to-point or one-to-one interface is setup for each facility code and will have its own credentials. If an organization has multiple locations, each will have its own credentials and reporting for 1 location only. For the point-to-point interface, the facility code associated with the credentials will be defaulted in the following fields: MSH-4.1 and RXA-11.4.

MSH-4.1 (Sending facility)  RXA-11.4 (Administering facility)

2. HUB Interface Model - A hub interface, also known as a one-to-many interface, or parent/child model, is setup with one set of credentials. The value of the HUB ID or Parent facility should be defaulted for MSH-4.1 for all messages regardless of administering location. While the MSH-4 value should remain the same, the hub interface is configured by the EHR Vendor/Interface Engineer to send the respective facility code in the RXA-11.4 field for the facility that is reporting the immunization information.

MSH-4.1 (Sending facility)  RXA-11.4 (Administering facility)

Web Service URLs

CIR UAT End Point URL:	https://immunize.nyc/hl7-service-uat/services/CirService
CIR UAT WSDL:	https://immunize.nyc/hl7-service-uat/services/CirService?wsdl
CIR PROD End Point URL:	https://immunize.nyc/hl7-service-prod/services/CirService
CIR PROD WSDL:	https://immunize.nyc/hl7-service-prod/services/CirService?wsdl

5. VXU TESTING

Once signed confidentiality forms are provided, CIR may share test credentials with the facility or EHR interface analyst to begin testing. Credentials comprise of a username, CIR sending facility code, password and sometimes an identity key.

1. The CIR requires test messages with required data elements to be submitted to our testing environment. The CIR interoperability specialist will review the test data and review for data completeness and quality.
2. We also require submitting live production data to our test environment (at least a day's worth of immunization data or data for 10 patients).

Please note that CIR production credentials are exchanged once onboard testing is approved by the CIR Interoperability Team.

6. DATA SUBMISSION (VXU) REQUIREMENTS

Please review our required and strongly recommended data requirements for immunization submissions with your EHR and/or interface analyst. For COVID only data submission checklist, click [here](#).

Request training with EHR vendor and establish a data entry workflow with your staff.

Testing scope depends on your organization's patient population type, practice setting, and participation in different programs.

1. [COVID reporting https://www1.nyc.gov/assets/doh/downloads/pdf/cir/cir-hl7-covid-requirements.pdf](https://www1.nyc.gov/assets/doh/downloads/pdf/cir/cir-hl7-covid-requirements.pdf)
2. [Vaccine for children \(VFC\) program](#)
3. [Promoting interoperability EHR incentivized programs \(MU 3, MIPPS\)](#)
4. [Vaccine for adults \(VFA\) program](#)

HL7 Field	HL7 Data Element	Scope
Required Data Elements		
MSH-4.1	CIR Facility Code (HL7 Interface ID)	All
PID-5	Patient Name: First Name, Middle Name (optional) and Last Name	All
PID-7	Patient Date of Birth	All
PID-8	Patient Administrative Sex	All
PID-10	Patient Race	All
PID-11	Patient Address	All
PID-13	Phone Number	All
PID-22	Patient Ethnicity	All
PD1-12	Patient Protection Indicator	Adult (except COVID)
PD1-13	Patient Protection Indicator Date	Adult (except COVID)
RXA-3	Vaccine Administration Date	All
RXA-6&7	Vaccine Administered Amount and Unit	All
RXA-11.4.1	CIR Facility Code (Administering Location)	All
RXA-15	Vaccine Lot Number: unit of sale	All
RXA-16	Vaccine Expiration Date	All
RXA-17	Vaccine Manufacturer: MVX code	All
RXR-1	Vaccine Route of Administration	All
RXR-2	Vaccine Administration Site (on the body)	All
OBX-3 and OBX5	Vaccine funding source	All

ORC-12.1 & 12.3	Ordering provider NYS license number or NPI number	COVID and strongly recommended for all others
RXA-5	Both Vaccine CVX code and NDC code (CVX RXA-5.1-3 NDC RXA-5.4-6)	MU 3, COVID
NK1-2&3	Next of Kin (name and phone # of kin and relationship)	VFC, Pediatric vaccinations
OBX-3 and OBX5	Vaccine program eligibility	VFC
Recommended Data Elements		
MSH-22	CIR facility code (Responsible Sending Organization)	All
PID-3.4	CIR facility code (Assigning Authority)	All
PID-6	Patient's Mother Maiden Name	All
OBX-3 and OBX5	Priority Group	COVID
OBX-3 and OBX5	History of Disease as Evidence of Immunity	MU 3, All
OBX-3 and OBX5	Serological Evidence of Immunity	MU 3, All

Required Data fields

Patient Administrative Sex PID-8

This field contains the patient's sex. This is a required field.

The CIR HL7 Web Service accepts the values specified in User-defined Table 0001 for Administrative Sex. If PID-8 is not valued or contains an unsupported value, the CIR HL7 Web Service will report a fatal error.

The CIR HL7 Web Service no longer utilizes a name to gender (sex) mapping process to identify the sex if a VXU message is received with a PID-8 value of "U."

Supported values for Administrative Sex are listed here for convenience.

Per the CDC's 2.5.1 IG, "O" (Other) is no longer an HL7 suggested value for Administrative Sex and, therefore, is not supported by the CIR HL7 Web Service in 2.5.1 messages.

User-defined Table 0001 - Administrative Sex

Preferred Value	Alternative Value	Description	Definition
F	F	Female	Person reports that she is female
M	M	Male	Person reports that he is male
U	U	Unknown-	Unknown
D	UND	Undetermined / Undifferentiated	No assertion is made about the gender of the person
N	NFNM	Neither Female nor Male	Person reports as neither female nor male
P	PNTA	Prefer Not to Answer	Person prefers not to answer
O	OTH	Other	Person reports as other
A	NA	Not Asked	Person was not asked about administrative sex

Race PID-10

This field refers to the patient’s race. The CIR supports all the governmentally assigned numeric Race code values listed in Table 0005 in the CDC IG. Additionally, CIR supports two CIR assigned codes for “Two or More Races” and “Prefer Not to Answer.” All other values will be ignored and the VXU message processed as if PID-10 was not valued. If PID-10 is not populated, the CIR HL7 Web Service will store value of “Not Indicated” for race and return a non-fatal error.

If reporting a patient of two or more races, report using value of “TOMR.” If multiple values for race are sent, the CIR HL7 Web Service will process the first Race in the list of repeating Races; all others will be ignored.

Supported values for race are listed below for convenience.

Race and ethnicity are important demographic data to collect to track equity of COVID vaccine distribution among different groups in NYC. Please read below the NYC DOHMH Health Advisory.

<https://www1.nyc.gov/assets/doh/downloads/pdf/han/advisory/2021/covid-19-vaccine-race-ethnicity-data.pdf>

US Race Codes	Description (Please use HL70005 or CDCREC as the coding system)
1002-5	American Indian or Alaska Native
2028-9	Asian
2076-8	Native Hawaiian or Other Pacific Islander
2054-5	Black or African-American
2106-3	White
2131-1	Other Race
<empty field>	CIR will store as “Not Indicated” and return non-fatal error
ASKU	Asked but No Answer
UNK	Unknown / Undetermined
CIR Race Codes*	Description (Please use CIR as the coding system)
	<small>*CIR codes are used for values below due to corresponding CDC Race and Ethnicity Codes being not yet available</small>
TOMR	Two or More Races
PNTA	Prefer Not to Answer
CDC Race Code*	Description (Please use CDCREC as the coding system)
	<small>*Support added for CDC race codes listed below</small>
PHC1175	Refused to Answer

If sending an HL7 or CDC code for Race, use “HL70005” or “CDCREC” for the corresponding code system. If sending a CIR code for race, use “CIR” for the corresponding code system.

Example:

|TOMR^Two or More Races^CIR|

|PNTA^Prefer Not to Answer^CIR|

|PHC1175^Refused to Answer^CDCREC|

The CIR HL7 Web Service does not support NIP alpha race codes.

If both alpha and numeric codes are sent, per the CDC IG, the second triplet of the CE data type for race should be used for the above governmentally assigned numeric codes (#####-#) as the first triplet is reserved for use (backward compatibility) of NIP alpha race codes.

Example:

|W^White^NIP^2106-3^White^HL70005| - or - |2106-3^White^HL70005|

Ethnic Group PID-22

This field further defines the patient's ancestry.

The CIR HL7 Web Service supports the following ethnicity codes:

N^Not Hispanic or Latino^HL70189

H^Hispanic or Latino^HL70189

U^Unknown^HL70189

2186-5^Not Hispanic or Latino^CDCREC

2135-2^Hispanic or Latino^CDCREC

PNTA^Prefer Not to Answer^CIR

PHC1367^Refused^CDCREC

Other values will be disregarded and a non-fatal error reported. The CIR HL7 Web Service will process the first Ethnicity code (i.e., PID-22.1) and will ignore any additional/alternate ethnicity code (PID-22.4).

If PID-22 is left blank, the CIR HL7 Web Service will return a non-fatal error.

Protection Indicator

Adult vaccinations (except for COVID-19) require consent from the patient to report to the Citywide Immunization Registry (CIR). PD1-12 requires the values below. PD1-13 is the date consent was obtained. Consent can be collected at time of patient registration or at time of vaccine administration.

HL7 Values	Description
N	Do not protect. Share with registry.
Y	Yes protect. Do not share with registry.
-blank-	CIR will consider this as an N. Do not protect. Share with registry.

Sample HL7 segment:

```
PD1|||||||^^|N|20210115|||A|20201115|20201115
```

Phone Numbers PID-13

Phone numbers are important for both patient matching and use of CIR tools like reminder/recall. The CIR supports a single current home phone, personal cellular phone number, and personal email address per patient. The CIR accepts all of the following values for reporting patient (PID segment) and next of kin (NK1 segment) phone numbers.

PID-13.2 or NK1-5.2 Telecom Use Code	Description	PID-13.3 or NK1-5.3 Telecom Equipment Type	Description	PID-13.4 or NK1-5.4 Email Address	PID-13.6 or NK1-5.6 Area Code	PID-13.7 or NK1-5.7 Phone Number
PRN	Primary Residence Number	PH	Phone		3 Digit Area Code	7 Digit Phone Number
		CP	Cell Phone			
ORN	Other Residence Number	PH	Phone			
		CP	Cell Phone			
EMR	Emergency Number	PH	Phone			
		CP	Cell Phone			
NET	Network (Email) Address	X.400	Email Address	emailaddress@email.com		
		Internet	Internet Address			

CIR IG reference: pgs. 27 – 30; 37 - 40

See HL7 Example:

```
PID|1||3124^^PATID^MR||Test^ELSA^^^^L^^^^^^|19830102|F||2028-9^Asian^HL70005|177 E Vaccine
ST^NY^NY^12345^USA||PH^1^212^555^155~^PRN^CP^1^917^555^7890~^NET^Internet^atest@email.com~^EM
R^PH^1^212^555^6155||ENG|S|OTHER|||||N^NOT HISPANIC OR LATINO^HL70189|||||||
```

Administering Location RXA-11.4

This field is used to report the facility that administered or recorded the immunization. Although this field has a usage of RE (required, but may be empty) by the CDC IG, **the CIR requires this field.**

A CIR issued facility code is required in RXA-11.4.1 when reporting new or historical immunizations. Failure to provide a valid CIR-issued facility code will result in a fatal error.

For a new immunization, the CIR-issued facility code of the facility at which the immunization was administered must be in RXA-11.4.1, the first position (i.e., the Namespace ID position) of the fourth component (i.e., the Facility HD component) of this field.

For a historical immunization, the HL7 data exchange partner must provide their CIR-issued facility code in RXA-11.4.1 (as described above), indicating the location recording the historical immunization.

When reporting observations, such as history of disease as evidence of immunity or serological evidence of immunity, the HL7 data exchange partner must also provide their CIR-issued facility code in RXA-11.4.1 (as described above), indicating the location recording the observation.

Example HL7:

```
RXA|0|1|20210101||207^COVID-19, mRNA, LNP-S, PF, 100 mcg/ 0.5 mL dose^CVX^COVID-19, mRNA, LNP-S,
PF, 100mcg/ 0.5 mL dose^NDC|0.5|ML^MilliLiter [SI Volume Units]^UCUM||01^Historical Record
Unspecified^NIP001|^9009X01|||||MOD^Moderna^MVX|||CP|A
```

Vaccine Route of Administration RXR-1

May submit either NCIT or HL7-0162 for route of administrations. If a VXU message is received where the RXR-1.1 is empty, the HL7 Web Service SHALL ignore the field. If RXR-1.3 (code system) is blank, ignore the RXR-1 segment and return a non-fatal error segment.

FDA NCI Thesaurus (NCIT)	HL7-0162	Description	Definition
C38238	ID	Intradermal	Within or introduced between the layers of the skin
C28161	IM	Intramuscular	Within or into the substance of a muscle
C38284	NS	Nasal	Given by nose
C38276	IV	Intravenous	Administered into a vein
C38288	PO	Oral	Administered by mouth
	OTH	Other/Miscellaneous	
C38676		Percutaneous	Made, done, or effected through the skin.
C38299	SC	Subcutaneous	Under the skin or between skin and muscles.
C38305	TD	Transdermal	Describes something, especially a drug, that is introduced into the body through the skin

Vaccine Administration Site RXR-2

If a VXU message is received where the RXR-2.1 is empty, the HL7 Web Service SHALL ignore the field.

If RXR-2.3 (code system) is blank, ignore the RXR-2 segment and return a non-fatal error segment.

HL7 0163	Description
LT	Left Thigh
LA	Left Arm
LD	Left Deltoid
LG	Left Gluteus Medius
LVL	Left Vastus Lateralis
LLFA	Left Lower Forearm
RA	Right Arm
RT	Right Thigh
RVL	Right Vastus Lateralis
RG	Right Gluteus Medius
RD	Right Deltoid
RLFA	Right Lower Forearm

Vaccine Funding Source

When an OBX is sent to convey the vaccine funding source, OBX-5.1 should contain one of the following codes from the PHVS Immunization Funding Source (IIS) value set. COVID vaccines should be documented as publicly funded for now.

Code	Label	Definition
PHC70	Private	vaccine stock used was privately funded
VXC50	Public	vaccine stock used was publicly funded

If OBX-5.1 contains an invalid code or one not supported by the CIR, a TableValueNotFound non-fatal error will be reported and the observation within the OBX will be ignored.

Ordering Provider

The Identifier Type Code (ORC-12.13) should be valued with “LN” when sending the provider’s license number and “NPI” when sending the provider’s NPI number; these are the HL7 suggested values from user-defined table 0203 (Identifier Type).

User-defined Table 0203 - Identifier Type

Value	Description	Constraints
LN	License Number	Used in ORC-12
NPI	National Provider Identifier	Used in ORC-12

NDC codes for newly administered vaccinations RXA-5

The CIR accepts NDC11 codes for newly administered immunizations in RXA-5.4: Alternate Identifier, RXA-5.5: Alternate Text, and RXA-5.6: Alternate Coding System. However, please note that CVX codes will still be required for all immunizations in RXA-5.1: Administered Code ID, RXA-5.2: Administered Code Text, and RXA-5.3: Administered Coding System.

CIR IG reference: There is no guidance in the current CIR IG regarding NDC codes. For NDC11 mappings with CVX code, please see the [CDC’s crosswalk](#)

See HL7 Example:

```
RXA|O|1|20180301|20180301|140^INFLUENZA (IM) PRESERVATIVE FREE^CVX^49281-417-88^INFLUENZA (IM) PRESERVATIVE FREE^NDC|0.5|mL||00^New Imm record^NIP001~|7736^Provider^Vaccine^^|^^9999119^^^MAIN INPATIENT|||U1839AB||PMC^Sanofi Pasteur^MVX|||CP|A|20180301102822-0500
```

Next of Kin NK1-2 and NK1-3

The CIR HL7 Web Service will support the relationship types (from User-defined Table 0063; no other HL7 relationship types will be accepted. If a relationship type other than the accepted types is provided, or if the relationship type is not valued, a non-fatal error will be reported, and the NK1-3 field will be valued as “OTH (Other).” Relationship type for self, “SEL”, will be ignored.

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

Vaccine Program Eligibility OBX-3 and OBX-5

For VFC Program participants, the VFC Eligibility must be reported for every newly administered immunization event for patients 18 and under to convey immunization-level vaccine funding program eligibility, OBX-3.1 should contain '64994-7' (e.g., VFC eligibility for the vaccine reported in RXA-5), OBX-5.1 should contain one of the HL7 Financial Class (VFC eligibility) codes that the CIR database supports.

OBX-3 HL7 VALUE	DESCRIPTION	OBX-5 HL7 VALUE	DESCRIPTION
64994-7	Vaccine funding program eligibility category	V01	Not VFC eligible
		V02	VFC eligible - Medicaid/Medicaid Managed Care
		V03	VFC eligible - Uninsured
		V04	VFC eligible - American Indian/Alaskan Native
		V05	VFC eligible - Federally Qualified Health Center Patient
		V07	State specific eligibility code, use for "CHPLUS B" patients.

See HL7 Example:

```
OBX|2|CE|64994-7^VACCINE FUNDING PROGRAM ELIGIBILITY^LN|1|V02^VFC eligible-Medicaid^HL70064|||||F|||20191011|
```

Recommended Data fields

Responsible Sending Organization MSH-22

This field identifies the business organization that originated and is accountable for the content of the message. The HL7 data exchange partner should value MSH-22 with a Facility Code that was assigned by the NYC DOHMH. If the Facility Code is not valid, the CIR HL7 Web Service will ignore the field and return a non-fatal error. Sending Responsible Organization may also be captured in MSH-4.2.

Assigning Authority PID-3.4

If sending a Medical Record Number, CIR HL7 Data Exchange Partners should value assigning authority (PID-3.4) with a Facility Code assigned by the NYC DOHMH. Other values for assigning authority (e.g., grantee code) are not supported at this time and are considered invalid.

If a Medical Record Number is sent but PID-3.4 is empty or contains an invalid value, the CIR HL7 Web Service shall default assigning authority to the facility code associated with Sending Responsible Organization (MSH-22 or MSH-4.2).

If Sending Responsible Organization is invalid or not populated, the CIR HL7 Web Service will then default assigning authority to the Administering Facility (RXA-11.4) for the last administered vaccine.

The CIR HL7 Web Service does not support the full data set of identifiers; for example, Social Security Number (SS) and Birth Registry Number (BR) are currently not supported. Do not send a Social Security Number.

Mother's Maiden Name PID-6

This field contains the family name under which the mother was born (i.e., before marriage). It is used to distinguish between patients with the same last name. The Last/Family Name (PID-6.1) and First/Given Name (PID-6.2) must each be 25 characters or less; otherwise it will be truncated and a non-fatal error reported. The

name type (PID-6.7) should be “M” for Maiden. If a name type is not provided in PID-6.7 or the name type is other than “M”, the name in PID-6 will still be considered the maiden name of the patient’s mother and no error will be reported. Other PID-6 components, (e.g., Middle Name, Last Name Prefix, Suffix, Prefix, and Degree), if provided, will be ignored.

History of Disease as evidence of immunity OBX-3 and OBX-5

History of disease as evidence of immunity indicates that a person has been diagnosed with a particular disease. Below are the values the CIR accepts for history of disease as evidence of immunity:

OBX-3 HL7 VALUE	DESCRIPTION	OBX-5 HL7 VALUE	DESCRIPTION
59784-9	History of Disease as Evidence of Immunity	38907003^History Of Varicella Infection	History of varicella infection

See HL7 Example:

```
RXA|0|1|20121011||998^No vaccine administered^CVX|999||||^^8000N70|||||||NA|A|
OBX|1|CE|59784-9^Disease with presumed immunity^LN|1|38907003^HISTORY OF VARICELLA
INFECTION^SCT|||||F|||20121201|
```

Serological evidence of immunity OBX-3 and OBX-5

Serological evidence of immunity indicates serology confirmed immunity to a particular disease. Below are the values the CIR accepts for serological evidence of immunity:

OBX-3 HL7 VALUE	DESCRIPTION	OBX-5 HL7 VALUE	DESCRIPTION
75505-8	Serological Evidence of Immunity	278971009^Hepatitis A immune	Serology confirmed hepatitis A
		271511000^Hepatitis B immune	Serology confirmed hepatitis B
		371111005^Measles immune	Serology confirmed measles
		371112003^Mumps immune	Serology confirmed mumps
		278968001^Rubella immune	Serology confirmed rubella
		371113008^Varicella immune	Serology confirmed varicella

See HL7 Example:

```
RXA|0|1|20160223||998^no vaccine administered^CVX|999||||^^8000N70|||||||NA|A|
OBX|1|CE|75505-8^Disease with presumed immunity^LN|1|278968001^Serology confirmed
rubella^SCT|||||F|||20150315|
```

Data Submission Expectations

Please submit the following test messages based on your scope. Please provide the MSH-10 value, the HL7 message ID.

HL7 VXU EXAMPLES

Pediatric VFC eligible test submission

Submit an administered VFC publicly funded MMR vaccination for a 5-year-old girl without insurance, race “Other”, ethnicity prefer not to say, mother as next of kin and a historical account of DTAP. The patient has both a home phone and a cell phone.

Example:

```
MSH|^~\&|Test EHR Application|CIR FAC CODE|NYC DOHMH|NYC DOHMH|20210116082240- 0500||VXU^V04^VXU_V04|Message control id # 5|P|2.5.1||ER|AL||||Z22^CDCPHINVS |CIR FAC CODE  
PID|1||C76273^^^CIR FAC CODE^MR||Test^Child^VFC^^^^L||20160111|F||2131-1^Other Race^CDCREC|320 11th Av^Brooklyn^NY^11220^USA^L|^PRN^PH^^^657^5558563~^PRN^CP^^^646^4085993|||||PHC1367^Refused^CDCREC  
PD1|||||||^^N|20210115||A|20210115|20210115  
NK1|1|Test^Mother^^^^L|MTH^Mother^HL70063|320 11th Av^Brooklyn^NY^11220^USA^L|^PRN^CP^^^646^4085993  
ORC|RE||153235^^||||||1211506315^Smith^John^^^^^^^^^^NPI  
RXA|0|1|20210110|20210110|20^DTap infarix^CVX|0.5|mL^MilliLiter^UCUM||01^Historical Record^NIP001|^CIR FAC CODE|||||CP|A  
ORC|RE||153235^^||||||1211506315^Smith^John^^^^^^^^^^NPI  
RXA|0|1|20210115|20210115|03^MMR^CVX|0.5|mL^MilliLiter^UCUM||00^New immunization record^NIP001|^CIR FAC CODE|||Z0860BB|20221115|MSD^Merck Sharp & Dohme Corp. ^MVX||CP|A  
RXR|C28161^Intramuscular^NCIT|LA^Left Arm^HL70163  
OBX|1|CE|30963-3^VACCINE FUNDING SOURCE^LN|1|VXC50^Publicly funded vaccine stock ^CDCPHINVS||||F||20210115|  
OBX|2|CE|64994-7^Vaccine funding program eligibility category^LN|2|V03^Uninsured^HL70064||||F||20210115||VXC40^Eligibility captured AT the immunization LEVEL^CDCPHINVS
```

COVID vaccination test submission

Submit an administered a publicly funded Moderna COVID vaccination for a 55-year-old individual with undisclosed administrative sex, race “Declined to Specify”, ethnicity non-Hispanic. The patient has both a home phone and a cell phone.

```
MSH|^~\&|Test EHR Application|CIR FAC CODE|NYC DOHMH|NYC DOHMH|20210116082240- 0500||VXU^V04^VXU_V04|Message control id # 5|P|2.5.1||ER|AL||||Z22^CDCPHINVS |CIR FAC CODE  
PID|1||M52375^^^CIR FAC CODE^MR||Test^Adult^Covid^^^^L||19650801|U||ASKU^Asked but no answer^HL70005|320 11th Av^Brooklyn^NY^11220^USA^L|^PRN^PH^^^657^5558563~^PRN^CP^^^646^4085993|||||2186-5^non Hispanic or Latino^CDCREC  
PD1|||||||^^N|20201115||A|20201115|20201115  
ORC|RE||153235^^||||||1211506315^Smith^John^^^^^^^^^^NPI  
RXA|0|1|20201115|20201115|207^COVID-19, mRNA, LNP-S, PF, 100 mcg/ 0.5 mL dose^CVX^80777-273-99^ COVID-19, mRNA, LNP-S, PF, 100 mcg/ 0.5 mL dose ^NDC|0.5|mL^MilliLiter^UCUM||00^New immunization record^NIP001|7832-1^Lemon^Mike^A^^^^^AA^^^PRN|^CIR FAC CODE|||Z0860BB|20221115|MOD^Moderna^MVX||CP|A  
RXR|C28161^Intramuscular^NCIT|LA^Left Arm^HL70163  
OBX|1|CE|30963-3^VACCINE FUNDING SOURCE^LN|1|VXC50^Publicly funded vaccine stock ^CDCPHINVS||||F||20180315|  
OBX|2|CE|64994-7^Vaccine funding program eligibility category^LN|2|V01^Not VFC  
Eligible^HL70064||||F||20200725||VXC40^Eligibility captured AT the immunization LEVEL^CDCPHINVS
```

Promoting Interoperability EHR Incentivized programs (MIPS) test submission

Submit a vaccination for a 78-year-old man receiving a publicly funded pneumococcal vaccine with a historical record of influenza vaccine, race Native Hawaiian or Other Pacific Islander and ethnicity declined to specify. Patient has a cell phone number.

Example:

```
MSH|^~\&|Test EHR Application|CIR FAC CODE|NYC DOHMH|NYC DOHMH|20210116082240- 0500||VXU^V04^VXU_V04|Message control id # 5|P|2.5.1||ER|AL||||Z22^CDCPHINVS |CIR FAC CODE  
PID|1||M12375^^^CIR FAC CODE^MR||Test^Adult^Mips^^^^L||19430801|U||2076-8^Native Hawaiian or Other Pacific Islander^HL70005|120 11th Av^Brooklyn^NY^11220^USA^L|^PRN^CP^^^646^4085993|||||PHC1367^Refused^CDCREC  
PD1|||||||^^N|20210115||A|20210115|20210115  
ORC|RE||153235^^||||||1211506315^Smith^John^^^^^^^^^^NPI  
RXA|0|1|20210115|20210115|133^Prevnar^CVX^00005-1971-02 ^Prevnar ^NDC|0.5|mL^MilliLiter^UCUM||00^New immunization record^NIP001|7832-1^Lemon^Mike^A^^^^^AA^^^PRN|^CIR FAC CODE|||Z0860BB|20221115|PFR^Pfizer^MVX||CP|A  
RXR|C28161^Intramuscular^NCIT|LA^Left Arm^HL70163
```

OBX|1|CE|30963-3^VACCINE FUNDING SOURCE^LN|1|VXC50^Publicly funded vaccine stock ^CDCPHINVS|||||F|||20180315|
 OBX|2|CE|64994-7^Vaccine funding program eligibility category^LN|2|V01^Not VFC
 Eligible^HL70064|||||F|||20200725||VXC40^Eligibility captured AT the immunization LEVEL^CDCPHINVS
 ORC|RE||153235^^|1211506315^Smith^John^^^^^^^^^^NPI
 RXA|0|1|20201015|20201015|88^Influenza NOS^CVX^|0.5|mL^MilliLiter^UCUM||01^Historical record^NIP001||^CIR FAC
 CODE|||||CP|A

Promoting Interoperability EHR incentivized program (MU 3) test submission

Submit a vaccination for a 5-year-old boy receiving an MMR publicly funded vaccine with serological evidence having had measles disease and a historical account of having had varicella disease. Boy has race Other and ethnicity declined to specify. Patient has both a cell phone and home phone number and has Medicaid. Father is the next of kin.

Example:

MSH|^~\&|Test EHR Application|CIR FAC CODE|NYC DOHMH|NYC DOHMH|20210116082240-
 0500|VXU^V04^VXU_V04|Message control id # 5|P|2.5.1||ER|AL|||||Z22^CDCPHINVS |CIR FAC CODE
 PID|1||C76273^^^CIR FAC CODE^MR||Test^Child^MU3^^^L|20160120|F||2131-1^Other Race^CDCREC|320 11th
 Av^Brooklyn^NY^11220^USA^L|^PRN^PH^^657^5558563~^PRN^CP^^646^4085993|||||PHC1367^Refused^CDCREC
 PD1|||||N|20210115||A|20210115|2021115
 NK1|1|Test^Father^^^L|FTH^Father^HL70063|320 11th Av^Brooklyn^NY^11220^USA^L
 |^PRN^CP^^646^4085993ORC|RE||153235^^|1211506315^Smith^John^^^^^^^^^^NPI
 RXA|0|1|20210115|20210115|03^MMR^CVX|0.5|mL^MilliLiter^UCUM||00^New immunization record^NIP001||^CIR FAC
 CODE|||Z0860BB|20221115|MSD^Merck Sharp & Dohme Corp. ^MVX||CP|A
 RXR|C28161^Intramuscular^NCIT|LA^Left Arm^HL70163
 OBX|1|CE|30963-3^VACCINE FUNDING SOURCE^LN|1|VXC50^Publicly funded vaccine stock ^CDCPHINVS|||||F|||20210115|
 OBX|2|CE|64994-7^Vaccine funding program eligibility
 category^LN|2|V02^Medicaid^HL70064|||||F|||20210115||VXC40^Eligibility captured At the immunization
 LEVEL^CDCPHINVS
 RXA|0|1|20191201||998^No vaccine administered^CVX|999|||||^CIR FAC CODE|||||NA|A|
 OBX|1|CE|59784-9^Disease with presumed immunity^LN |1|38907003^HISTORY OF VARICELLA
 INFECTION^SCT|||||F|||20191201|
 RXA|0|1|20200315||998^no vaccine administered^CVX|999|||||^8000N70|||||NA|A|
 OBX|1|CE|75505-8^Disease with presumed immunity^LN|1|371113008^Serology confirmed
 varicella^SCT|||||F|||20200315|

No program participation

Submit a vaccination for a 21-year receiving an HPV privately funded vaccine with a historical record of influenza vaccine. Patient declined to specify race and is Hispanic. Patient has a cell phone number.

MSH|^~\&|Test EHR Application|CIR FAC CODE|NYC DOHMH|NYC DOHMH|20210116082240-
 0500|VXU^V04^VXU_V04|Message control id # 5|P|2.5.1||ER|AL|||||Z22^CDCPHINVS |CIR FAC CODE
 PID|1||C76273^^^CIR FAC CODE^MR||Test^Adult^HPV^^^L|20000120|F||PHC1175^Refused^CDCREC |320 11th
 Av^Brooklyn^NY^11220^USA^L|^PRN^CP^^646^4085993|||||H^Hispanic or Latino^HL70189
 PD1|||||N|20210115||A|20210115|2021115
 ORC|RE||153235^^|1211506315^Smith^John^^^^^^^^^^NPI
 RXA|0|1|20210115|20210115|165^HPV Gardasil^CVX|0.5|mL^MilliLiter^UCUM||00^New immunization record^NIP001||^CIR
 FAC CODE|||Z0860BB|20221115|MSD^Merck Sharp & Dohme Corp. ^MVX||CP|A
 RXR|C28161^Intramuscular^NCIT|LD^Left Arm^HL70163
 OBX|1|CE|30963-3^VACCINE FUNDING SOURCE^LN|1|PHC70^Private vaccine stock ^CDCPHINVS|||||F|||20210115|
 ORC|RE||153235^^|1211506315^Smith^John^^^^^^^^^^NPIRXA|0|1|20201015|20201015|88^Influenza
 NOS^CVX^|0.5|mL^MilliLiter^UCUM||01^Historical record^NIP001||^CIR FAC CODE|||||CP|A

7. QUERY IMMUNIZATION HISTORY AND FORECAST(QBP) TESTING

Query testing requirements are:

1. Query Demo
2. Populating MSH-22 with the CIR facility that is querying and not the sending facility if different from the querying facility.

Query Demo

All VXU reporting requirements usually are met first before moving to QBP testing if the new connection is bidirectional.

QBP testing consists of demonstrating your EHR interface screen and running different querying scenarios with CIR test patients. These test patients should be added to your EHR interface before the demonstration. Please review the [QBP guide](#) for further details.



Before the QBP call, please ensure to have access to your provider's live interface if you will be testing with a client's interface.

1. New Patient Scenario for Single Match Found
2. Existing Patient Scenario for Single Match Found
3. Single Match Found with Warning
4. Single Match Found with Invalid Historical Doses
5. Single Match Found with Immunization Forecasting
6. Single Match Found with Immunization Recommendations
7. Too Many Found
8. No Patient Found

Specific Querying Site MSH-22

To better support data quality issues and MU Stage 3 compliance, the CIR would like their data exchange partners to identify the facility code of the querying site (i.e., the “child” site that it querying under the “parent” or “hub” site, which is sent in MSH-4.1). To identify the querying site in a QBP message, the CIR facility code should be sent in MSH-22: Responsible Sending Organization.

See HL7 Example:

```
MSH|^~\&|EHR-Name|8000N70|||20180111051122-0400||QBP^Q11^QBP_Q11|ExistingPT_Qry_03|T|2.5.1|||NE|AL|||9999Q99  
QPD|Z34^Request Immunization History^HL70471|QT216987|777851651^^^^LR~MM54321M^^^9999Q99^MR|LName^FName^ ^^^L|  
20081015|F|  
RCP||1^RD|R
```