



Kentucky Immunization Registry (KYIR)

QBP Technical Specifications

Commonwealth of Kentucky

Cabinet for Health & Family Services

Document derived from Connecticut Department of Public Health

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Introduction

Transmission of immunization records between KYIR and the provider organization will be based on the CDC/AIRA HL7 Version 2.5.1 Implementation Guide for Immunization Messaging, Release 1.5, 10/1/2014, Updated October 2018¹ (HL7 2.5.1 Implementation Guide) and the KYIR Local Implementation Guide for HL7 2.5.1 Release 1.5².

An ideal transaction would consist of 4 messages, each of which are further outlined in this document:

1. Query from the provider organization (QBP) to KYIR
2. Response (RSP) from KYIR to the provider organization
3. Update (VXU) from the provider organization to KYIR
4. Acknowledgement (AA or AE) from KYIR to the provider organization

Disclaimer: Immunization records returned from KYIR may not be complete. The records represent only the data that has been reported to and/or entered into the system.

Important Notes:

- **Data Types:** Refer to the CDC IG for the data type specifications for each field.
- **QBP Prior to VXU:** The provider organization must attempt to query KYIR before submitting an update in a VXU message.
- **QBP Field Definitions:** The likelihood of finding a particular person is improved when all known parameters are populated. The provider organization should strive to include values for each query parameter.
- **Response from KYIR:** KYIR will send responses as specified in the CDC IG. Responses will be sent when the provider organization queries immunization records for individuals for whom a record exists (or may exist) in KYIR.

¹ <https://chfs.ky.gov/agencies/os/oats/Documents/HL7Book.pdf>

² <https://chfs.ky.gov/agencies/os/oats/Documents/LIG.pdf>

Optional Fields: If the provider organization sends optional fields, they must be properly formatted and must not contain any errors. Providers should consider sending optional fields as null values.

Return Vaccination Forecasts: If forecasting is desired, the provider organization can submit a Message Profile Identifier (MSH-21) and Message Query Code (QPD-1.1) of Z44. This will be recognized in KYIR as a request for evaluated history and forecast, and will result in a Z33 or Z42 response (RSP) message.

Clinic Profile	Recommended QBP Type	
	Z34 (history only)	Z44 (history & forecast)
Your EHR <u>has forecaster</u> , and <u>full patient histories have been Sent</u>	✓	
Your EHR <u>has forecaster</u> , and <u>full patient histories have not been sent</u>	✓	
Your EHR <u>has no forecaster</u> , and <u>full patient histories have been sent</u>		✓
Your EHR <u>has no forecaster</u> , and <u>full patient histories have not been sent</u>	✓	✓ *

*Note that vaccine recommendations returned may be inaccurate if the patient’s full immunization history has not been reported to KYIR.

IIS Response for Exact Patient Match: When a query finds an exact patient match, KYIR response will return

- **Medical Record Number and KYIR Patient ID**
- **Patient Name, Gender, Date of Birth, and Multiple Birth Indicator**
- **Patient Contact Information (Address and Phone Number)**
- **Parent or Guardian Name(s) and Primary Contact Information (Phone Number and/or Email Address)**
- **Race, Ethnicity, and Language**
- **Vaccination History, Contraindications, and Vaccine Forecast (for Z44 query)**

QBP Segment Usage in Proper Sequence

Segment	Usage	Comments
Message Header (MSH)	Required	Every message must begin with an MSH
Query Parameter Definition (QPD)	Required	Every QBP must have one QPD segment
Response Control Parameter (RCP)	Required	Every QBP must have one RCP segment

Required and Optional HL7 Message Segments in Proper Sequence

Message Header (MSH)

Required Field		Comments	Value
MSH-1	Field Separator		
MSH-2	Encoding Characters		^~\&
MSH-3	Sending Application	Supplied by Provider organization	
MSH-4	Sending Facility	Supplied by KYIR	KY9999
MSH-5	Receiving Application		KY0000
MSH-6	Receiving Facility		KY0000
MSH-7	Date and Time of Message	<p>Precision must be at least to the minute; If time zone is not included, it is presumed to be the time zone of the sender Format without time zone: YYYYMMDDHHMMSSmmm</p> <p>Format with time zone: YYYYMMDDHHMMSSmmm+/-ZZZZ</p>	
MSH-9	Message Type		QBP^Q11^QBP_Q11
MSH-10	Message Control ID	This value is generated by the sending application. It will be echoed back in the response message from the IIS.	
MSH-11	Processing ID	Used to route messages to the proper environment which has security safeguards for protected health information	T = Training P = Production
MSH-12	Version ID		2.5.1
MSH-15	Accept Acknowledgement Type		ER
MSH-16	Application Acknowledgement Type		AL

Required Field		Comments	Value
MSH-21	Message Profile Identifier	KYIR uses Z34 to indicate a request for a complete immunization history and Z44 to request an evaluated immunization history and forecast.	Z34^CDCPHINVS Z44^CDCPHINVS
MSH-22	Responsible Sending Organization	May be empty	
MSH-23	Responsible Receiving Organization	May be empty	
<p>Example MSH segment from the organization KY9999 sent to the registry on June 20, 2019 at 19:57.</p> <pre>MSH ^~\& EHR Test KY9999 KY0000 KY0000 20190620195749.905-0400 QBP^Q11^QBP_Q11 KY999938854000000232 T 2.5.1 ER AL Z34^CDCPHINVS</pre>			

Query Parameter Definition (QPD)

Required Field		Comments	Value
QPD-1	Message Query Name		
	QPD-1.1	Message Query Code	KYIR uses Z34 to indicate a request for a complete immunization history and Z44 to request an evaluated immunization history and forecast Z34 Z44
	QPD-1.2	Message Query Description	Request Immunization History Request Evaluated History and Forecast
	QPD-1.3	Message Query Coding System	HL70471
QPD-2	Query Tag	Valued by the sending system to identify the query, this value is unique to each query message instance and may be used to match response messages to the origination query. It will be echoed back as the first field in the query acknowledgment segment (QAK) of the response.	
QPD-3	Patient Identifier List		The first repetition must be the Medical Record Number or KYIR Patient ID (if stored from a previous query/update). Subsequent repetitions may include a Medical Record Number or KYIR Patient ID.
	QPD-3.1	Internal Patient Identifier	
	QPD-3.5	Identifier Type	MR = Medical Record Number SR = KYIR Patient ID

Required Field		Comments	Value
QPD-4	Patient Name		Legal name of the patient
	QPD-4.1	Patient Last Name	
	QPD-4.2	Patient First Name	
	QPD-4.3	Patient Middle Name or Initial	May be empty; Used to distinguish between patients with the same first and last name in KYIR
	QPD-4.7	Patient Name Type Code	L
QPD-5	Mother's Maiden Name		May be empty; Used to distinguish between patients with the same last name in KYIR. Searches for guardian name using mother's maiden name.
	QPD-5.1	Mother's Maiden Last Name	
	QPD-5.2	Mother's Maiden First Name	
	QPD-5.7	Mother's Maiden Name Type Code	M
QPD-6	Date of Birth	Format: YYYYMMDD	
QPD-7	Administrative Sex	Refer to Table 0001 in the CDC IG for a listing of acceptable values	

Required Field		Comments	Value
QPD-8	Patient Address		May be empty; Primary address of the patient
	QPD-8.1	Patient Street Address 1	
	QPD-8.2	Patient Street Address 2	
	QPD-8.3	Patient City	
	QPD-8.4	Patient State	Only states with the USA are allowable values
	QPD-8.5	Patient Postal Zip Code	
	QPD-8.6	Patient Country Code	
	QPD-8.7	Patient Address Type Code	Refer to Table 0190 in the CDC IG for a listing of acceptable values. If not valued, it will default to "L".
QPD-9	Phone Number		May be empty
	QPD-9.2	Telecommunication Use Code	Refer to Table 0201 in the CDC IG for a listing of acceptable values
	QPD-9.3	Telecommunication Equipment Type	Refer to Table 0202 in the CDC IG for a listing of acceptable values
	QPD-9.6	Area Code	
	QPD-9.7	Phone Number	
QPD-10	Multiple Birth Indicator	Acceptable values are "Y" and "N". If status is undetermined, the field may be empty.	
QPD-11	Birth Order	Populated if QPD-10 (Multiple Birth Indicator) is valued "Y"	

Example: QPD segment requesting a complete immunization history for the patient STEVE TYLER SMITH born on February 19, 2003 with a medical record number of 896301 and a mother whose maiden name is: RACHEL HODGES.

```
QPD|Z34^Request Immunization  
History^HL70471|querytag|896301^^^MR|SMITH^STEVE^TYLER^^^L|  
HODGES^RACHEL^^^^M|20030219|M|9208 EMERALD  
FOREST^^RICHMOND^KY^40475^US^H|^PRN^CP^^615^444444|||
```

Response Control Parameter (RCP)

This segment is required. It should be used to restrict the number of candidate records that should be returned in response to a query.

Required Field		Comments	Value
RCP-1	Query Priority	May be empty or “I” to indicate immediate priority is expected; Note that “I” is the “i” capitalized.	
RCP-2	Quantity Limited Request	May be empty; This field may contain a maximum number of records (patient candidates) that may be returned in response to the query. NOTE: KYIR considers too many candidates to be the value in RCP-2.1 or 10, whichever value is lowest. For example, if the value in RCP-2.1 is 5 and the number of candidates is 7, only 5 patients are returned. If the value in RCP-2.1 is empty or 10 and the number of candidates identified in KYIR is 23, a Z33 response profile will be returned. Refer to Message 2: Response to a Query (RSP) section within this document for additional details.	
RCP-2.1	Quantity Limited Number	Contains the count of records that may be returned, default is 10; Value must be numeric.	
RCP-2.2	Quantity Limited Code	Any value without a unit of ‘RD’ will be treated as invalid.	RD

Example RCP segment to immediately return no more than 10 records:

RCP||10^RD

Message 1: Query for Vaccination Record (QBP)

KYIR should first be queried using demographic information and/or other identifiers using a Query ID of Z34 or Z44 in order to:

- a. request and receive a patient's complete immunization history (Z34)

OR

- b. request and receive an evaluated immunization history and forecast of next vaccine doses due (Z44)

It is up to the provider's organization to specify whether they want to request and receive the patient's complete immunization history or the patient's evaluated immunization history and forecast of next doses. If forecasting is desired, KY DPH will configure KYIR to return forecasting information on all queried patients.

NOTE: If no matches are found or if there are errors, no patients will be returned.

Exact Match

1. The IIS will attempt to locate an exact match by applying the following criteria:
 - a. First and Last Name supplied match the patient's name, the patient's alias name, or the patient's birth record name in the IIS.
 - b. The Date of Birth matches the patient's DOB in the IIS.

Data Element	Location in QBP Message
Patient Last Name	QPD-4.1
Patient First Name	QPD-4.2
Date of Birth	QPD-6

2. If step 1 resulted in a single match, then the search is completed, and the result is returned via the RSP message.

3. If step 1 resulted in multiple matches, the following filters will be applied in the order presented until either a single record remains or until applying the filter would result in no matches remaining:

Data Element	Location in QBP Message	Notes
KYIR Patient ID	QPD-3.1	Value in QPD-3.5 (SR)
Medical Record Number	QPD-3.1	Value in QPD-3.5 (MR)
Gender	QPD-7	
Mother's Maiden Name	QPD-5.1	
Cell Phone	QPD-9	Value in QPD-9 (ORN)
Email Address	QPD-9	Value in QPD-9 (NET)
Physical Address	QPD-8	Value in QPD-8 (H, P)
Mailing Address	QPD-8	Value in QPD-8 (M, L, C)

4. If one or more records remain in the result set after step 3, results are returned via the RSP message as appropriate.

No Match/Too Many Matches

1. If the initial search resulted in no matches found, the IIS will attempt a less restrictive search by applying all of the following criteria:
 - a. One of the following is true:
 - i. The Last name supplied matches the patient's last name or alias last name and the First name supplied is similar to the patient's first name or alias first name.
 - ii. The First name supplied matches the patient's first name or alias first name and the Last name supplied is similar to the patient's last name or alias last name.
 - iii. The Last name supplied matches the patient's birth record last name and the First name supplied is similar to the patient's birth record first name.
 - iv. The First name supplied matches the patient's birth record first name and the Last name supplied is similar to the patient's birth record last name.
 - b. The Middle name supplied (if any) is similar to the patient's middle name, patient's first middle initial, alias middle name, or birth record middle name or the patient's middle name field is empty in the IIS.
 - c. The DOB supplied matches the patient's DOB or the patient's DOB is empty in the IIS.
2. If step 1 results in no records or a single record matching, the IIS will respond with a RSP message indicating no records were found. (Because a looser matching algorithm was applied, a single record match cannot be assumed to be an exact match without human intervention. Therefore, matching records will not be returned unless at least two potential matches are found.)

3. If step 1 results in multiple matches being found, all of the following filters will be applied. If the filter is a patient identifier (a, b, g, or h), the filter can reduce the match to a single record. If the filter is not a patient identifier (c, d, e, f, i, or j), the filter can reduce until either only two records remain or until applying the filter would result in less than two matches remaining:
 - a. KYIR Patient ID
 - b. Requesting Application's Medical Record Number
 - c. Gender
 - d. Mother's Maiden Name
 - e. Birth State
 - f. Mother's First/Last Name
 - g. Cell phone
 - h. Email
 - i. Physical address
 - j. Mailing address

Message 2: Response to a Query (RSP)

The **MSA (Message Acknowledgement Segment)** portion of the RSP message will be used to acknowledge receipt of the QBP message and provide an assessment of the message condition (AA, AE, or AR). *Note: KYIR will not include optional or “X” fields in the MSA segment (MSA-3 through MSA-6). These fields will be blank when returned from KYIR.*

The **QAK (Query Acknowledgement Segment)** portion of the RSP message will be used to communicate the outcome of a query message. Possible QAK outcomes (QAK-2) are noted in the table below. *Note: KYIR will not include optional fields in the QAK segment (QAK-4 through QAK-6). These fields will be blank when returned from KYIR.*

Query Outcome	Profile	Response Message	Comments
Multiple candidate patients found	Z31	At least one lower confidence match is found. The number of candidates returned will be less than or equal to the maximum number allowed per RCP-2.1 or 10, whichever value is lowest (for example, if there are 6 candidates and RCP-2.1 is valued at 5, only 5 of the 6 candidates will be returned. One Patient Identifier (PID) segment with associated Patient Demographic (PD1) and Next of Kin (NK1) segments (if applicable) for each potential match is returned. NOTE: If a Z31 profile response is returned with a single candidate, the IIS converts it into a Z32 profile response.	The initiator of the QBP message will be able to review the patient list returned and use the information to inform a re-query.
Exact match found	Z32	Exactly one high confidence match is found and the patient’s complete immunization history is returned. The response is very similar to a VXU message in content.	This will support transferring a person’s immunization records from one information system to another.
No match found	Z33	Message was successfully processed but no patients matched the criteria sent in the query, therefore no demographic or immunization history is returned; QAK-2 is valued NF to indicate no data found.	
Too many matches found	Z33	Message was successfully processed but the number of candidates identified exceeds 10 or the RCP-2.1 value, therefore no demographic or immunization history is returned; QAK-2 is valued NF to indicate no data found.	

Query Outcome	Profile	Response Message	Comments
Evaluated History and Forecast	Z42	Exactly one high confidence match is found and the patient's evaluated history and vaccine forecast is returned.	
Application Reject (AR)		The IIS was unable to process the query. The message was rejected and an acknowledgment (ACK) describing issues with the submitted query is returned in the form of an application reject (AR).	Information returned in the AR will assist with correcting the query.

The IIS will always respond with an appropriate message type in the QAK-2 response segment:

- If no matching records are found, a RSP message with query response status code of **NF** (Not Found) message will be returned.
- If a single matching record is found, a RSP message with a query response status code of **OK** message will be returned.
- If multiple matching records are found, a RSP message with a query response status code of **OK** message will be returned.
- If too many matches are found, a RSP message with a query response status code of **TM** message will be returned.
- The TM (too many) message will also be returned if the value in RCP-2, (QuantityLimitedRequest) is less than the number of matches found.
- If a significant issue is found in the incoming message that would prevent an effective search from being accomplished, a RSP message with a query response status code of **AE** or **AR** message will be returned with additional details about the error encountered.

NOTE: For any search, if there is a matching record that is marked for deletion in the IIS or the patient has **opted out**, a record will not be returned as part of the search results.

Message 3: Update to a Vaccination Record (VXU)

Once the EHR receives a response from KYIR that results in the selection of a desired patient, providers will follow routine clinic workflows for vaccinating and reporting new doses to KYIR via VXU.

- Immunization update messages should follow the requirements established in the KYIR Local Implementation Guide for HL7 2.5.1 Release 1.5 and CDC/AIRA HL7 2.5.1 Implementation Guide.
- The provider organization may attempt to find an individual's KYIR Patient ID using a QBP prior to sending a VXU. If the individual is found in KYIR, the VXU can include the individual's registry number in the Patient Identifier List (PID-3).

Message 4: Acknowledgment to an Update (ACK)

After a new VXU is received by KYIR, an ACK message will be issued to acknowledge receipt of the newly submitted messages.

- Refer to the KYIR Local Implementation Guide for HL7 2.5.1 Release 1.5 and the CDC/AIRA HL7 2.5.1 Implementation Guide for acknowledgment details and examples.

Suggested Testing Protocol

Testing for QBP/RSP is typically composed of the following elements:

1. Query KYIR for the vaccination record of a patient that exists in the EHR
2. The EHR will receive a response from KYIR that will reflect one the following scenarios
 - a. Exact patient match (proceed to next step)
 - b. Multiple match candidates (select patient of interest and re-query for the specified patient)
 - c. No match (patient does not exist in KYIR or does not exist with the specified parameters)
 - d. Too many match candidates (increase RCP value or re-query with more specific patient detail)
3. Review the response (patient record) returned from KYIR and determine which elements to incorporate into the EHR record
4. Record new vaccine administrations for the patient and generate a new VXU report to the IIS.
5. Provider/EHR will receive an acknowledgement (ACK) of receipt from KYIR for the new message.

Providers should apply multiple layers of testing:

- Submit 25-50 records via VXU to query against for a guaranteed response (exact match and forecast)
- Query using KYIR engineered test scenarios (multi-match or too many matches)
- Query KYIR for real patients that present for vaccinations (match/no match, VXU update after vaccination)

Multi-match Scenarios:

Testing for multiple match candidates and too many matches can be difficult, so KYIR has engineered the following test cases for testing these scenarios. ***NOTE: do NOT alter these test cases by administering vaccinations. This is intended to test match returns ONLY. To begin, providers will need to create the test patients in their EHR and then query KYIR to demonstrate the match return. If a record accidentally gets altered, please notify KYIR onboarding staff immediately (CHFSOATSKYR@ky.gov).***

Test Patients: Create the following patients in your EHR

(Consult with your vendor before entering these test patients into your EHR. You may have to turn off any processes that would automatically send new patients/vaccines to KYIR. Enter all patient vaccinations as historical.)

Patient		
1.	Name	Mickey R. Mouse
	Date of Birth	05/05/2005
	Mother	Susanne Stephens
	Address	312 Jason Dr, Richmond, KY 40475
	Immunizations	Hep B 05/05/2005
2.	Name	Minnie Mouse
	Date of Birth	02/05/2011
	Mother	Mary Cooper
	Address	107 Meridian Way, Richmond, KY 40475
	Immunizations	
3.	Name	Daffy Duck
	Date of Birth	02/19/2003
	Mother	
	Address	
	Immunizations	

Patient Key: Verify that your system can accurately identify and select the following patients from the list of match candidates returned by KYIR to the EHR.

Patient	Returned Patient Data		Test Scenario
1.	Name	Mickey Randel Mouse	Since two patients match, return will depend on QBP settings in RCP-2. Determine how your EHR is configured. If set to single match return, no record will be returned. If set to '2' (or more), two matched patients will be returned, but with no vaccination info. To identify the correct patient, your EHR should allow you to re-query each individual matching patient and retrieve their vaccination history. If more than one patient is returned, how will clinic resolve who is the correct patient?
	Date of Birth	05/05/2005	
	Mother	Susanne Stephens	
	Address	312 Jason Dr Richmond, KY 40475	
	Immunizations	Hep B 05/05/2005	
2.	Name	Minnie Mouse	Since there are two patients that match, return will depend on settings in RCP-2. Determine how your EHR is configured. If set to single return, duplicate patients will not be returned. If set to '2' or more, more than one patient may be returned. If more than one patient is returned, how will clinic resolve who is the correct patient?
	Date of Birth	02/05/2011	
	Mother	Mary Cooper	
	Address	107 Meridian Way Richmond, KY 40475	
	Immunizations	Pediarix 04/05/2011 and 06/05/2011 MMR 03/05/2012	

3.	Name	Daffy Everett Duck	<p>Since there are multiple patients that will match on Daffy Duck with DOB 02/19/2003, the number of returns will depend on settings in RCP-2. If set to '2', a response of "too many matches" will be returned. If set to '10', an array of Daffy Duck options will be returned. If more than one patient is returned, how will your clinic resolve who is the correct patient? If "too many matches" is returned, what options does your system offer to narrow the search criteria?</p>
	Date of Birth	02/19/2003	
	Mother	Rachel Bell	
	Address	1012 Center Dr, Richmond, KY 40475	
	Immunizations	Hep A, Ped/Adol 2 dose, 4/15/2011	
		HPV9 1/10/2016	

Appendix A: Example QBP Message

Example Z34: Request Complete Immunization History

Below is a full QBP message example from the organization HL7 UNIT TEST CLINIC. The organization sent the query to the registry on June 20, 2019 at 19:57. The query is requesting a complete immunization history for the patient STEVE TYLER SMITH born on Feb 19th, 2003 with a medical record number of 896301 and a mother whose maiden name is RACHEL HODGES response to the query should be immediately returned with no more than 10 records.

```
MSH|^~\&|EHR Test|KY9999|KY0000|KY0000|20190620195749.905-0400||QBP^Q11^QBP_Q11|KY999938854000000232|T|2.5.1|||ER|AL|||Z34^CDCPHINVS  
QPD|Z34^Request Immunization  
History^HL70471|querytag|896301^^^^MR|SMITH^STEVE^TYLER^^^^L|HODGES^  
RACHEL^^^^M^|20030219|M|9208 EMERALD  
FOREST^^RICHMOND^KY^40475^US^H|^PRN^CP^^615^4444444|||  
RCP||10^RD
```

Example Z44: Request Evaluated History and Forecast

The organization HL7 UNIT TEST CLINIC queries the registry on June 20, 2019 at 19:57 requesting an evaluated immunization history and forecast for the patient STEVE TYLER SMITH born on Feb 19th, 2003 with a medical record number of 896301 and a mother whose maiden name is RACHEL HODGES.

```
MSH|^~\&|EHR Test|KY9999|KY0000|KY0000|20190620195749.905-0400||QBP^Q11^QBP_Q11KY999938854000000233|T|2.5.1|||ER|AL|||Z34^CDCPHINVS  
QPD|Z44^Request Evaluated History and  
Forecast^HL70471|querytag|896301^^^^MR|SMITH^STEVE^TYLER^^^^L|HODGES^  
RACHEL^^^^M^|20030219|M|9208 EMERALD  
FOREST^^RICHMOND^KY^40475^US^H|^PRN^CP^^615^4444444|||  
RCP||10^RD
```

Appendix B: Example Response (RSP) Messages

An Error with Query:

The example QBP message from Appendix A was edited to remove the RCP segment. As a result, the system will describe in the Error (ERR) segment the issue that was found it.

```
MSH|^~\&|WebIZ.19.2.20190531|KY0000|EHR Test|KY9999|20190801101720-0400||RSP^K11^RSP_K11|KY000020190801172010|T|2.5.1|||NE|NE|||Z32^CDCPHINVS  
MSA|AE|KY999938854000000232
```

```
ERR||RCP^1|999^ApplicationError^HL70357|W|3^Illogical Value error^HL70533^WEBIZ-501^Internal Parser Conformance Violation Occurred^L||NumericPath: RCP[1], NamePath: RCP, RuleId: , ApplicationErrorCode: WEBIZ-501|Internal Parser Error: Required segment missing
```

```
QAK|querytag|OK|Z34^Request Immunization History^HL70471
```

```
QPD|Z34^Request Immunization
```

```
History^HL70471|querytag|896301^^^^MR|SMITH^STEVE^TYLER^^^^L|HODGES^RACHEL^^^^M|20030219|M|9208 EMERALD FOREST^^RICHMOND^KY^40475^US^H|^PRN^CP^^^615^4444444
```

```
PID|1||907245^^^KY0000^SR~896301^^^KY9999^MR||SMITH^STEVE^TYLER^^^^L|CARPIO^FRAN  
CISCO^^^^^M|20030219|M||2106-3^White^CDCREC|9208 EMERALD  
FOREST^^RICHMOND^KY^40475^USA^M^^09001~9208 EMERALD  
FOREST^^RICHMOND^KY^40475^USA^P^^09001|^PRN^PH^^^860^7946801|^WPN^PH^^^860^  
7946801|ENG^English^ISO6392|S^Single^HL70002|||2135-2^Hispanic or  
Latino^CDCREC||N|||20190703|Y||20190801
```

```
PD1|||||||||||||P|20190703
```

```
PV1|1|R|||||||||||||V02
```

```
ORC|RE||14515672^KY0000
```

```
RXA|0|1|20110415|20110415|83^Hep A, ped/adol,  
2D^CVX|0.5|mL^MilliLiter^UCUM||01^Historical Information - Source  
Unspecified^NIP001||HL7_UNIT_TST^^^KY9999|||X34HF|20201210|SKB^GlaxoSmithKline  
(formerly SmithKline Beecham)^MVX||CP|A|20190627
```

```
OBX|1|CE|64994-7^Vaccine funding program eligibility category^LN|1|V02^VFC Eligible -  
Medicaid/Medicaid Managed Care^HL70064|||F||20110415||VXC40^Vaccine  
Level^CDCPHINVS
```

OBX|2|CE|69764-9^Vaccine Information Statement Document
Type^LN|2|253088698300004211160720^Hep A, ped/adol, 2D^cdcgs1vis|||||F|||20110415

OBX|3|DT|29769-7^Date Vaccine Information Statement
Presented^LN|2|20110415|||||F|||20110415

**ZSA|AW^Application Warning - One or more ERR segments returned with at most a severity of W
for
Warning^ENV0008|230126^^^KY0000^HL7LogIdIncomming~621386^^^KY0000^WebServiceLogIdI
ncomming~KY999938854000000232^^^KY9999^MessageControlId|907245^^^KY0000^SR**

Exact Match Found, no Forecasting:

The example QBP message from Appendix A was submitted to request the patient’s complete immunization history. Exactly one high confidence match was found. The response is very similar to a VXU message in content.

MSH|^~\&|WebIZ.19.2.20190531|KY0000|EHR Test|KY9999|20190801110514-
0400||RSP^K11^RSP_K11|KY000020190801051434|T|2.5.1|||NE|NE|||||Z32^CDCPHINVS

MSA|AA|KY999938854000000232

QAK|querytag|OK|Z34^Request Immunization History^HL70471

QPD|Z34^Request Immunization
History^HL70471|querytag|896301^^^MR|SMITH^STEVE^TYLER^^^L|HODGES^RACHEL^^^M|
20030219|M|9208 EMERALD FOREST^^RICHMOND^KY^40475^US^H|^PRN^CP^^^615^4444444

PID|1||907245^^^KY0000^SR~496300^^^KY9999^MR||SMITH^STEVE^TYLER^^^L|CARPIO^FRANC
ISCO^^^M|20030219|M||2106-3^White^CDCREC|9208 EMERALD
FOREST^^RICHMOND^KY^40475^USA^M^^09001~9208 EMERALD
FOREST^^RICHMOND^KY^40475^USA^P^^09001||^PRN^PH^^^860^7946801|^WPN^PH^^^860^79
46801|ENG^English^ISO6392|S^Single^HL70002|||||2135-2^Hispanic or
Latino^CDCREC||N|||||20190703|Y|||20190801

PD1|||||||||||||P|20190703

PV1|1|R|||||||||||||V02

ORC|RE||14515672^KY0000

RXA|0|1|20110415|20110415|83^Hep A, ped/adol,
2D^CVX|0.5|mL^MilliLiter^UCUM||01^Historical Information - Source
Unspecified^NIP001||HL7_UNIT_TST^^^KY9999|||X34HF|20201210|SKB^GlaxoSmithKline
(formerly SmithKline Beecham)^MVX|||CP|A|20190627

OBX|1|CE|64994-7^Vaccine funding program eligibility category^LN|1|V02^VFC Eligible -
Medicaid/Medicaid Managed Care^HL70064|||||F|||20110415|||VXC40^Vaccine
Level^CDCPHINVS

OBX|2|CE|69764-9^Vaccine Information Statement Document
Type^LN|2|253088698300004211160720^Hep A, ped/adol, 2D^cdcgs1vis|||||F|||20110415

OBX|3|DT|29769-7^Date Vaccine Information Statement
Presented^LN|2|20110415|||||F|||20110415

ORC|RE||14515673^KY0000

RXA|0|1|20160110|20160110|165^HPV9^CVX|0.5|mL^MilliLiter^UCUM||01^Historical
Information - Source
Unspecified^NIP001||HL7_UNIT_TST^^^KY9999|||R016971|20210508|MSD^Merck \T\ Co,
Inc.^MVX|||CP|A|20190627

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

OBX|1|CE|64994-7^Vaccine funding program eligibility category^LN|1|V02^VFC Eligible -
Medicaid/Medicaid Managed Care^HL70064|||||F|||20160110|||VXC40^Vaccine
Level^CDCPHINVS

OBX|2|CE|69764-9^Vaccine Information Statement Document
Type^LN|2|253088698300029511161202^HPV9^cdcgs1vis|||||F|||20160110

OBX|3|DT|29769-7^Date Vaccine Information Statement
Presented^LN|2|20160110|||||F|||20160110

ZSA|AA^Application Accept - Good message with no
problems^ENV0008|230138^^^KY0000^HL7LogIdIncomming~621556^^^KY0000^WebServiceLogIdI
ncomming~KY999938854000000232^^^KY9999^MessageControlId|907245^^^KY0000^SR

Exact Match Found, includes Forecasting:

The organization HL7 UNIT TEST CLINIC receives a response message containing a single patient match with an evaluated immunization history and forecast for STEVE TYLER SMITH born Feb 19, 2003. The patient previously received 2 immunizations and is forecasted for 9 additional immunizations. **NOTE:** Patient immunization forecast is bolded in the example Z42 message.

MSH|^~\&|Web|Z.19.2.20190329|KY0000|EHR Test|KY9999|20190708115144-
0400||RSP^K11^RSP_K11|KY000020190708514417|T|2.5.1|||NE|NE|||||Z42^CDCPHINVS

MSA|AA|KY999938854000000232

QAK|querytag|OK|Z44^Request Evaluated History and Forecast^HL70471

QPD|Z44^Request Evaluated History and Forecast^HL70471|querytag|896301^^^^MR|SMITH^STEVE^TYLER^^^^L|HODGES^RACHEL^^^M|20030219|M|9208 EMERALD FOREST^^RICHMOND^KY^40475^US^H|^PRN^CP^^^615^4444444

PID|1||907240^^^KY0000^SR~494521^^^KY9999^MR||SMITH^STEVE^TYLER^^^^L|HODGES^RACHEL^^^^M|20030219|M||2054-5^Black or African-American^CDCREC|9208 EMERALD FOREST^^RICHMOND^KY^40475^USA^M^^09001~9208 EMERALD FOREST^^RICHMOND^KY^40475^USA^P^^09001|^PRN^PH^^^203^2136724|^WPN^PH^^^203^2136724|ENG^English^ISO6392|||||2186-5^Not Hispanic or Latino^CDCREC|N|||||||20190708

ORC|RE||14515661^KY0000

RXA|0|1|20110415|20110415|83^Hep A, ped/adol, 2D^CVX|999|||01^Historical Information - Source Unspecified^NIP001||HL7_UNIT_TST^^^KY9999|||X34HF||SKB^GlaxoSmithKline (formerly SmithKline Beecham)^MVX||CP|A|20190627

OBX|1|CE|30956-7^Vaccine Type^LN|1|85^Hep A, UF^CVX|||||F|||20110415

OBX|2|ID|59781-5^Dose Validity^LN|1|Y|||||F|||20110415

OBX|3|NM|30973-2^Dose Number in Series^LN|1|1|NA^Not Applicable^HL70353|||||F|||20110415

OBX|4|CE|59779-9^Immunization Schedule Used^LN|1|VXC16^ACIP^CDCPHINVS|||||F|||20110415

OBX|5|CE|64994-7^Vaccine funding program eligibility category^LN|2|V02^VFC Eligible - Medicaid/Medicaid Managed Care^HL70064|||||F|||20110415||VXC40^Vaccine Level^CDCPHINVS

OBX|6|CE|69764-9^Vaccine Information Statement Document Type^LN|3|253088698300004211160720^Hep A, ped/adol, 2D^cdcgs1vis|||||F|||20110415

OBX|7|DT|29769-7^Date Vaccine Information Statement Presented^LN|3|20110415|||||F|||20110415

ORC|RE||14515662^KY0000

RXA|0|1|20160110|20160110|165^HPV9^CVX|999|||01^Historical Information - Source Unspecified^NIP001||HL7_UNIT_TST^^^KY9999|||R016971||MSD^Merck \T\ Co, Inc.^MVX||CP|A|20190627

OBX|1|CE|30956-7^Vaccine Type^LN|1|137^HPV, UF^CVX|||||F|||20160110

OBX|2|ID|59781-5^Dose Validity^LN|1|Y|||||F|||20160110

OBX|3|NM|30973-2^Dose Number in Series^LN|1|1|NA^Not
Applicable^HL70353||||F|||20160110

OBX|4|CE|59779-9^Immunization Schedule
Used^LN|1|VXC16^ACIP^CDCPHINVS||||F|||20160110

OBX|5|CE|64994-7^Vaccine funding program eligibility category^LN|2|V02^VFC Eligible -
Medicaid/Medicaid Managed Care^HL70064||||F|||20160110||VXC40^Vaccine
Level^CDCPHINVS

OBX|6|CE|69764-9^Vaccine Information Statement Document
Type^LN|3|253088698300029511161202^HPV9^cdcgs1vis||||F|||20160110

OBX|7|DT|29769-7^Date Vaccine Information Statement
Presented^LN|3|20160110||||F|||20160110

ORC|RE||9999^KY0000

RXA|0|1|20190708|20190708|998^No Vaccine Administered^CVX|999|||||||||NA

OBX|1|CE|30956-7^Vaccine Type^LN|1|08^Hep B, ped/adol^CVX||||F|||20190708

OBX|2|DT|30981-5^Earliest date dose should be given^LN|1|20030219||||F|||20190708

OBX|3|DT|30980-7^Date Vaccine Due^LN|1|20030219||||F|||20190708

OBX|4|DT|59777-3^Latest date next dose should be
given^LN|1|20220218||||F|||20190708

OBX|5|DT|59778-1^Date dose is overdue^LN|1|20030318||||F|||20190708

OBX|6|CE|59783-1^Series Status^LN|1|LA13423-1^Overdue^LN||||F|||20190708

OBX|7|CE|59779-9^Immunization Schedule
Used^LN|1|VXC16^ACIP^CDCPHINVS||||F|||20190708

OBX|8|CE|30956-7^Vaccine Type^LN|2|10^Polio-IPV^CVX||||F|||20190708

OBX|9|DT|30981-5^Earliest date dose should be given^LN|2|20030402||||F|||20190708

OBX|10|DT|30980-7^Date Vaccine Due^LN|2|20030419||||F|||20190708

OBX|11|DT|59777-3^Latest date next dose should be
given^LN|2|20210218||||F|||20190708

OBX|12|DT|59778-1^Date dose is overdue^LN|2|20030615||||F|||20190708

OBX|13|CE|59783-1^Series Status^LN|2|LA13423-1^Overdue^LN||||F|||20190708

OBX|14|CE|59779-9^Immunization Schedule
Used^LN|2|VXC16^ACIP^CDCPHINVS||||F|||20190708

OBX|15|CE|30956-7^Vaccine Type^LN|3|03^MMR^CVX||||F|||20190708

OBX|16|DT|30981-5^Earliest date dose should be given^LN|3|20040219|||||F|||20190708
 OBX|17|DT|30980-7^Date Vaccine Due^LN|3|20040219|||||F|||20190708
 OBX|18|DT|59778-1^Date dose is overdue^LN|3|20040716|||||F|||20190708
 OBX|19|CE|59783-1^Series Status^LN|3|LA13423-1^Overdue^LN|||||F|||20190708
 OBX|20|CE|59779-9^Immunization Schedule
 Used^LN|3|VXC16^ACIP^CDCPHINVS|||||F|||20190708
 OBX|21|CE|30956-7^Vaccine Type^LN|4|21^Varicella^CVX|||||F|||20190708
 OBX|22|DT|30981-5^Earliest date dose should be given^LN|4|20040219|||||F|||20190708
 OBX|23|DT|30980-7^Date Vaccine Due^LN|4|20040219|||||F|||20190708
 OBX|24|DT|59778-1^Date dose is overdue^LN|4|20040716|||||F|||20190708
 OBX|25|CE|59783-1^Series Status^LN|4|LA13423-1^Overdue^LN|||||F|||20190708
 OBX|26|CE|59779-9^Immunization Schedule
 Used^LN|4|VXC16^ACIP^CDCPHINVS|||||F|||20190708
 OBX|27|CE|30956-7^Vaccine Type^LN|5|115^Tdap, Adsorbed^CVX|||||F|||20190708
 OBX|28|DT|30981-5^Earliest date dose should be given^LN|5|20100219|||||F|||20190708
 OBX|29|DT|30980-7^Date Vaccine Due^LN|5|20100219|||||F|||20190708
 OBX|30|DT|59778-1^Date dose is overdue^LN|5|20100219|||||F|||20190708
 OBX|31|CE|59783-1^Series Status^LN|5|LA13423-1^Overdue^LN|||||F|||20190708
 OBX|32|CE|59779-9^Immunization Schedule
 Used^LN|5|VXC16^ACIP^CDCPHINVS|||||F|||20190708
 OBX|33|CE|30956-7^Vaccine Type^LN|6|83^Hep A, ped/adol, 2D^CVX|||||F|||20190708
 OBX|34|DT|30981-5^Earliest date dose should be given^LN|6|20111015|||||F|||20190708
 OBX|35|DT|30980-7^Date Vaccine Due^LN|6|20111015|||||F|||20190708
 OBX|36|DT|59778-1^Date dose is overdue^LN|6|20111015|||||F|||20190708
 OBX|37|CE|59783-1^Series Status^LN|6|LA13423-1^Overdue^LN|||||F|||20190708
 OBX|38|CE|59779-9^Immunization Schedule
 Used^LN|6|VXC16^ACIP^CDCPHINVS|||||F|||20190708
 OBX|39|CE|30956-7^Vaccine Type^LN|7|165^HPV9^CVX|||||F|||20190708
 OBX|40|DT|30981-5^Earliest date dose should be given^LN|7|20160610|||||F|||20190708
 OBX|41|DT|30980-7^Date Vaccine Due^LN|7|20160710|||||F|||20190708
 OBX|42|DT|59778-1^Date dose is overdue^LN|7|20170309|||||F|||20190708

OBX|43|CE|59783-1^Series Status^LN|7|LA13423-1^Overdue^LN|||||F|||20190708

OBX|44|CE|59779-9^Immunization Schedule
Used^LN|7|VXC16^ACIP^CDCPHINVS|||||F|||20190708

OBX|45|CE|30956-7^Vaccine Type^LN|8|114^MCV4 (Menactra)^CVX|||||F|||20190708

OBX|46|DT|30981-5^Earliest date dose should be given^LN|8|20190219|||||F|||20190708

OBX|47|DT|30980-7^Date Vaccine Due^LN|8|20190219|||||F|||20190708

OBX|48|DT|59777-3^Latest date next dose should be
given^LN|8|20220218|||||F|||20190708

OBX|49|DT|59778-1^Date dose is overdue^LN|8|20200317|||||F|||20190708

OBX|50|CE|59783-1^Series Status^LN|8|LA13422-3^On Schedule^LN|||||F|||20190708

OBX|51|CE|59779-9^Immunization Schedule
Used^LN|8|VXC16^ACIP^CDCPHINVS|||||F|||20190708

OBX|52|CE|30956-7^Vaccine Type^LN|9|141^Influenza, Seasonal^CVX|||||F|||20190708

OBX|53|DT|30981-5^Earliest date dose should be given^LN|9|20190701|||||F|||20190708

OBX|54|DT|30980-7^Date Vaccine Due^LN|9|20190701|||||F|||20190708

OBX|55|CE|59783-1^Series Status^LN|9|LA13422-3^On Schedule^LN|||||F|||20190708

OBX|56|CE|59779-9^Immunization Schedule
Used^LN|9|VXC16^ACIP^CDCPHINVS|||||F|||20190708

OBX|57|CE|30956-7^Vaccine Type^LN|10|03^MMR^CVX|||||F|||20190708

OBX|58|DT|30981-5^Earliest date dose should be
given^LN|10|20190805|||||F|||20190708

OBX|59|DT|30980-7^Date Vaccine Due^LN|10|20190805|||||F|||20190708

OBX|60|DT|59778-1^Date dose is overdue^LN|10|20190805|||||F|||20190708

OBX|61|CE|59783-1^Series Status^LN|10|LA13422-3^On Schedule^LN|||||F|||20190708

Multiple Patients Returned:

The example QBP message from Appendix A was edited to only include the patient's first name (QPD-4.2), last name (QPD-4.1), and date of birth (QPD-6). There were seven patients in KYIR with the same first name, last name, and date of birth. As a result, a list of candidate patients was returned (Z31). The response returned one Patient Identifier (PID) segment with associated Patient Demographic (PD1) and Next of Kin (NK1) segments (if applicable) for each potential match. No immunization history was returned.

MSH|^~\&|WebZ.19.2.20190329|KY0000|EHR Test|KY9999|20190702092201-0400||RSP^K11^RSP_K11|KY000020190702220166|T|2.5.1|||NE|NE|||||Z31^CDCPHINVS
MSA|AA|KY999938854000000232

QAK|querytag|OK|Z34^Request Immunization History^HL70471

QPD|Z34^Request Immunization History^HL70471|querytag|496300^^^^MR|DUCK^DAFFY^^^^L|RACHEL^BELL^^^^M|20030219|M

PID|1||907240^^^KY0000^SR~494521^^^KY9999^MR||DUCK^DAFFY^EVERETT^^^^L|RACHEL^BELL^^^^M|20030219|M||2054-5^Black or African-American^CDCREC|1012 CENTER DR^^RICHMOND^KY^40475^USA^M^^09001~1012 CENTER DR^^RICHMOND^KY^40475^USA^P^^09001||^PRN^PH^^203^2136724|^WPN^PH^^203^2136724|ENG^English^ISO6392|||||2186-5^Not Hispanic or Latino^CDCREC||N|||||||20190701

PD1|||||||||||||A|20190626

NK1|1|BURCH^TREAUVON^W^^^^L|FTH^FATHER^HL70063

NK1|2|CARPIO^FRANCISCO^^^^L|MTH^MOTHER^HL70063|||||||||||||||||PR^Primary Contact^HL70222

NK1|3|CARPIO^FRANCISCO^^^^L|MTH^MOTHER^HL70063|^PRN^PH^^203^2136724|^WPN^PH^^203^2136724

PV1|1|R|||||||||||||V02

PID|2||907241^^^KY0000^SR~5004^^^KY9999^MR||DUCK^DAFFY^STEVE^^^^L|RACHEL^BEL L^^^^M|20030219|M||2054-5^Black or African-American^CDCREC|1012 CENTER DR^^RICHMOND^KY^40475^USA^M^^09001~1012 CENTER DR^^RICHMOND^KY^40475^USA^P^^09001|||||||2186-5^Not Hispanic or Latino^CDCREC||N|||||||20190626

PD1|||||||||||||A|20190614

PV1|1|R|||||||||||||V02

PID|3||907242^^^KY0000^SR||DUCK^DAFFY^GREG^^^^L|RACHEL^BELL^^^^M|20030219|M||1012 CENTER DR^^RICHMOND^KY^40475^USA^M^^09001~1012 CENTER DR^^RICHMOND^KY^40475^USA^P^^09001|||||||||N|||||||20190614

PD1|||||||||||||A|20190614

PV1|1|R|||||||||||||V02

PID|4||907243^^^KY0000^SR||DUCK^DAFFY^LARRY^^^^L|RACHEL^BELL^^^^^M|20030219|M||1012 CENTER DR^^RICHMOND^KY^40475^USA^M^^09001~1012 CENTER DR^^RICHMOND^KY^40475^USA^P^^09001||||||||||||N|||||||20190614

PD1|||||||||||||A|20190614

PV1|1|R|||||||||||||V02

PID|5||907244^^^KY0000^SR||DUCK^DAFFY^CARL^^^^L|RACHEL^BELL^^^^^M|20030219|M||1012 CENTER DR^^RICHMOND^KY^40475^USA^M^^09001~1012 CENTER DR^^RICHMOND^KY^40475^USA^P^^09001||||||||||||N|||||||20190614

PD1|||||||||||||A|20190614

PV1|1|R|||||||||||||V02

PID|6||907245^^^KY0000^SR||DUCK^DAFFY^MICHAEL^^^^L|RACHEL^BELL^^^^^M|20030219|M||1012 CENTER DR^^RICHMOND^KY^40475^USA^M^^09001~1012 CENTER DR^^RICHMOND^KY^40475^USA^P^^09001||||||||||||N|||||||20190614

PD1|||||||||||||A|20190614

PV1|1|R|||||||||||||V02

PID|7||907246^^^KY0000^SR||DUCK^DAFFY^DANTE^^^^L|RACHEL^BELL^^^^^M|20030219|M||1012 CENTER DR^^RICHMOND^KY^40475^USA^M^^09001~1012 CENTER DR^^RICHMOND^KY^40475^USA^P^^09001||||||||||||N|||||||20190614

PD1|||||||||||||A|20190614

PV1|1|R|||||||||||||V02

ZSA|AA^Application Accept - Good message with no problems^ENV0008|230146^^^KY0000^HL7LogIdIncomming~621608^^^KY0000^WebServiceLogIdIncomming~KY999938854000000232^^^KY9999^MessageControlld

Too Many Matches Found:

The example QBP message only included the patient’s first name (QPD-4.2), last name (QPD-4.1), and date of birth (QPD-6). This time, there are too many matches found in KYIR with the same first name, last name, and date of birth. As a result, a query outcome of no match found (Z33) was returned. No demographic or immunization history was returned.

QAK-2 is valued NF to indicate no data found.

MSH|^~\&|WebIZ.19.2.20190329|KY0000|EHR Test|KY9999|20190708123102-0400|RSP^K11^RSP_K11|KY000020190708310205|T|2.5.1|||NE|NE|||Z33^CDCPHINVS
MSA|AA|KY999938854000000232

QAK|querytag|NF|Z34^Request Immunization History^HL70471
QPD|Z34^Request Immunization
History^HL70471|querytag|MINNIE^MOUSE^^^^^L|20110205|F

Opted Out Patient:

The example QBP message only included the patient's first name (QPD-4.2), last name (QPD-4.1), and date of birth (QPD-6). The matches found in KYIR are the same first name, last name, and date of birth. As a result, a query outcome of no match found (Z33) was returned. No demographic or immunization history was returned.

QAK-2 is valued NF to indicate no data found.

MSH|^~\&|WebIZ.19.2.20190329|KY0000|EHR Test|KY9999|20190708144520-0400||RSP^K11^RSP_K11|KY000020190708452046|T|2.5.1|||NE|NE|||||Z33^CDCPHINVS
MSA|AA|KY999938854000000232
QAK|querytag|NF|Z34^Request Immunization History^HL70471
QPD|Z34^Request Immunization
History^HL70471|querytag|496300^^^^MR|DUCK^DAFFY^CARL^^^^L|20030219|M

Deceased Patient:

The example QBP message only included the patient's first name (QPD-4.2), last name (QPD-4.1), and date of birth (QPD-6). The matches found in KYIR are the same first name, last name, and date of birth. Demographic and immunization history was returned.

NOTE: PID-30 indicates Patient Death Indicator as **Y**.

MSH|^~\&|WebIZ.19.2.20190329|KY0000|EHR Test|KY9999|20190708133913-0400||RSP^K11^RSP_K11|KY000020190708391346|T|2.5.1|||NE|NE|||||Z32^CDCPHINVS
MSA|AA|KY999938854000000232
QAK|querytag|OK|Z34^Request Immunization History^HL70471
QPD|Z34^Request Immunization
History^HL70471|querytag|496300^^^^MR|DUCK^DAFFY^MICHAEL
^^^^L|RACHEL^BELL^^^^^M|20030219|M
PID|1||907245^^^KY0000^SR||DUCK^DAFFY^MICHAEL^^^^L|RACHEL^BELL^^^^^M|20030219|M||1012 CENTER DR^^RICHMOND^KY^40475^USA^M^^09001~1012 CENTER DR^^RICHMOND^KY^40475^USA^P^^09001|||||||||N|||||20190703|Y|||20190614

PD1|1|P|20190703

PV1|1|R|V02

ORC|RE||14515672^KY0000

RXA|0|1|20110415|20110415|83^Hep A, ped/adol, 2D^CVX|999|||01^Historical Information - Source Unspecified^NIP001||HL7_UNIT_TST^^^KY9999|||X34HF||SKB^GlaxoSmithKline (formerly SmithKline Beecham)^MVX||CP|A|20190627

OBX|1|CE|64994-7^Vaccine funding program eligibility category^LN|1|V02^VFC Eligible - Medicaid/Medicaid Managed Care^HL70064|||F||20110415||VXC40^Vaccine Level^CDCPHINVS

OBX|2|CE|69764-9^Vaccine Information Statement Document Type^LN|2|253088698300004211160720^Hep A, ped/adol, 2D^cdcgs1vis|||F||20110415

OBX|3|DT|29769-7^Date Vaccine Information Statement Presented^LN|2|20110415|||F||20110415

ORC|RE||14515673^KY0000

RXA|0|1|20160110|20160110|165^HPV9^CVX|999|||01^Historical Information - Source Unspecified^NIP001||HL7_UNIT_TST^^^KY9999|||R016971||MSD^Merck \T\ Co, Inc.^MVX||CP|A|20190627

OBX|1|CE|64994-7^Vaccine funding program eligibility category^LN|1|V02^VFC Eligible - Medicaid/Medicaid Managed Care^HL70064|||F||20160110||VXC40^Vaccine Level^CDCPHINVS

OBX|2|CE|69764-9^Vaccine Information Statement Document Type^LN|2|253088698300029511161202^HPV9^cdcgs1vis|||F||20160110

OBX|3|DT|29769-7^Date Vaccine Information Statement Presented^LN|2|20160110|||F||20160110