

ShowMeVax

QBP Technical Specifications

*Missouri Department of Health and Senior Services*

Table of Contents

[Introduction 3](#_Toc35961456)

[QBP Segment Usage in Proper Sequence 5](#_Toc35961457)

[Required and Optional HL7 Message Segments in Proper Sequence 6](#_Toc35961458)

[Message Header (MSH) 6](#_Toc35961459)

[Query Parameter Definition (QPD) 8](#_Toc35961460)

[Response Control Parameter (RCP) 12](#_Toc35961461)

[Message 1: Query for Vaccination Record (QBP) 13](#_Toc35961462)

[Exact Match 13](#_Toc35961463)

[No Match/Too Many Matches 14](#_Toc35961464)

[Message 2: Response to a Query (RSP) 16](#_Toc35961465)

[Message 3: Update to a Vaccination Record (VXU) 18](#_Toc35961466)

[Message 4: Acknowledgment to an Update (ACK) 18](#_Toc35961467)

[Suggested Testing Protocol 19](#_Toc35961468)

[Appendix A: Example QBP Message 22](#_Toc35961469)

[Appendix B: Example Response (RSP) Messages 23](#_Toc35961472)

# Introduction

Transmission of immunization records between ShowMeVax and the provider organization will be based on the [WebIZ Immunization Information System HL7 2.5.1 Release 1.5 Implementation Guide.](https://health.mo.gov/atoz/mophie/pdf/WebIZHL7IG2.5.1.pdf)

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 ShowMeVax
2. Response (RSP) from ShowMeVax to the provider organization
3. Update (VXU) from the provider organization to ShowMeVax
4. Acknowledgement (AA or AE) from ShowMeVax to the provider organization

**Disclaimer:** Immunization records returned from ShowMeVax 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 ShowMeVax 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 ShowMeVax:** ShowMeVax 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 ShowMeVax.

**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 ShowMeVax 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 **has forecaster**, and **full patient histories have been Sent** |  |  |
| Your EHR **has forecaster**, and **full patient histories have not been sent** |  |  |
| Your EHR **has no forecaster**, and **full patient histories have been sent** |  |  |
| Your EHR **has no forecaster**, and **full patient histories have not been sent** |  | \* |

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

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

* **Medical Record Number and ShowMeVax 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 ShowMeVax | MO9999 |
| **MSH-5** | Receiving Application |  | SHOWMEVAX |
| **MSH-6** | Receiving Facility |  | MODHSS |
| **MSH-7** | Date and Time of Message | 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  Format with time zone: YYYYMMDDHHMMSSmmm+/-ZZZZ |  |
| **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  Acceptable values:   * T for Training (used when testing) * P for Production | 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 | ShowMeVax 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 |  |
| **Example** MSH segment from the organization MO9999 sent to the registry on June 20, 2019 at 19:57.  MSH|^~\&|EHR Test|MO9999|ShowMeVax|MODHSS|20190620195749.905-0400||QBP^Q11^QBP\_Q11|MODHSS38854000000232|T|2.5.1|||ER|AL|||||Z34^CDCPHINVS | | | |

## Query Parameter Definition (QPD)

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Required Field** | | | | | **Comments** | | **Value** | |
| **QPD-1** | Message Query Name | | | |  | |  | |
| **QPD-1.1** | | Message Query Code | | ShowMeVax 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 ShowMeVax Patient ID (if stored from a previous query/update). Subsequent repetitions may include a Medical Record Number or ShowMeVax Patient ID. | |  | |
| **QPD-3.1** | | Internal Patient Identifier | |  | |  | |
| **QPD-3.5** | | Identifier Type | |  | | MR = Medical Record Number  SR = ShowMeVax 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 ShowMeVax | |  | |
| **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 ShowMeVax. 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^^COLUMBIA^MO^65201^US^H|^PRN^CP^^^615^4444444||| | | | | |

## 

## 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**: ShowMeVax 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 ShowMeVax 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|I|10^RD | | | | |

# Message 1: Query for Vaccination Record (QBP)

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

* 1. request and receive a patient’s complete immunization history (Z34)

**OR**

* 1. 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 or not 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, MO DHSS will configure ShowMeVax 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:
   1. 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.
   2. 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 |

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

1. 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** |
| ShowMeVax 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) |

1. 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:
   1. One of the following is true:
      1. 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.
      2. 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.
      3. 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.
      4. 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.
   2. 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.
   3. 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:
   1. ShowMeVax Patient ID
   2. Requesting Application’s Medical Record Number
   3. Gender
   4. Mother’s Maiden Name
   5. Birth State
   6. Mother’s First/Last Name
   7. Cell phone
   8. Email
   9. Physical address
   10. 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: ShowMeVax will not include optional or “X” fields in the MSA segment (MSA-3 through MSA-6). These fields will be blank when returned from ShowMeVax.*

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: ShowMeVax will not include optional fields in the QAK segment (QAK-4 through QAK-6). These fields will be blank when returned from ShowMeVax.*

| **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. |  |
| 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 ShowMeVax that results in the selection of a desired patient, providers will follow routine clinic workflows for vaccinating and reporting new doses to ShowMeVax via VXU.

* Immunization update messages should follow the requirements established in the

[WebIZ Immunization Information System HL7 2.5.1 Release 1.5 Implementation Guide.](https://health.mo.gov/atoz/mophie/pdf/WebIZHL7IG2.5.1.pdf)

* The provider organization may attempt to find an individual’s ShowMeVax Patient ID using a QBP prior to sending a VXU. If the individual is found in ShowMeVax, 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 ShowMeVax, an ACK message will be issued to acknowledge receipt of the newly submitted messages.

* Refer to the WebIZ Immunization Information System HL7 2.5.1 Release 1.5 Implementation Guide for acknowledgment details and examples.

# Suggested Testing Protocol

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

1. Query ShowMeVax for the vaccination record of a patient that exists in the EHR
2. The EHR will receive a response from ShowMeVax that will reflect one the following scenarios
   1. Exact patient match (proceed to next step)
   2. Multiple match candidates (select patient of interest and re-query for the specified patient)
   3. No match (patient does not exist in ShowMeVax or does not exist with the specified parameters)
   4. Too many match candidates (increase RCP value or re-query with more specific patient detail)
3. Review the response (patient record) returned from ShowMeVax 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 ShowMeVax 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 ShowMeVax engineered test scenarios (multi-match or too many matches)
* Query ShowMeVax 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 ShowMeVax 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 ShowMeVax to demonstrate the match return. If a record accidentally gets altered, please notify Immunization staff immediately (ImmunizationHL7Onboarding@health.mo.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 ShowMeVax. Enter all patient vaccinations as historical.)

|  |  |  |
| --- | --- | --- |
| **Patient** |  | |
| 1. | Name | David R. Daniels |
|  | Date of Birth | 05/05/2005 |
|  | Mother | Susanne Stephens |
|  | Address | 101 Main St, Columbia, MO 65201 |
|  | Immunizations | Hep B 05/05/2005 |
| 2. | Name | Fiona Watson |
|  | Date of Birth | 02/05/2011 |
|  | Mother | Mary Cooper |
|  | Address | 303 Hills St, Columbia, MO 65201 |
|  | Immunizations |  |
| 3. | Name | Phil Jackson |
|  | 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 ShowMeVax to the EHR.***

|  |  |  |  |
| --- | --- | --- | --- |
| **Patient** | **Returned Patient Data** | | **Test Scenario** |
| 1. | Name | David Randel Daniels | 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. In order 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 | 101 Main St, Columbia, MO 65201 |
|  | Immunizations | Hep B 05/05/2005 |
| 2. | Name | Fiona Watson | 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 | 303 Hills St, Columbia, MO 65201 |
|  | Immunizations | Pediarix 04/05/2011 and 06/05/2011 |
|  |  | MMR 03/05/2012 |
| 3. | Name | Phil Everett Jackson | Since there are multiple patients that will match on Phil Jackson 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 Phil Jackson 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? |
|  | Date of Birth | 02/19/2003 |
|  | Mother | Rachel Bell |
|  | Address | 9208 Emerald Forest, Columbia, MO 65201 |
|  | 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|MO9999|SHOWMEVAX|MODHSS|20190620195749.905-0400||QBP^Q11^QBP\_Q11|MODHSS38854000000232|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^^COLUMBIA^MO^65201^US^H|^PRN^CP^^^615^4444444|||||

RCP|I|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|MO9999|SHOWMEVAX|MODHSS|20190620195749.905-0400||QBP^Q11^QBP\_Q11|MODHSS38854000000233|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^^COLUMBIA^MO^65201^US^H|^PRN^CP^^^615^4444444|||||

RCP|I|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|MODHSS|EHR Test|MODHSS|20190801101720-0400||RSP^K11^RSP\_K11|MO000020190801172010|T|2.5.1|||NE|NE|||||Z32^CDCPHINVS

MSA|AE|MODHSS38854000000232

**ERR**||RCP^1|999^ApplicationError^HL70357|W|3^Illogical Value error^HL70533^WEBIZ-501^Internal Parser Conformance Violation Occured^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^^COLUMBIA^MO^65201^US^H|^PRN^CP^^^615^4444444

PID|1||907245^^^MODHSS^SR~896301^^^MODHSS^MR||SMITH^STEVE^TYLER^^^^L|CARPIO^FRANCISCO^^^^^M|20030219|M||2106-3^White^CDCREC|9208 EMERALD FOREST^^COLUMBIA^MO^65201^USA^M^^09001~9208 EMERALD FOREST^^COLUMBIA^MO^65201^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^MODHSS

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^^^MODHSS||||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^^^MODHSS^HL7LogIdIncomming~621386^^^MODHSS^WebServiceLogIdIncomming~MODHSS38854000000232^^^MODHSS^MessageControlId|907245^^^MODHSS^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|MODHSS|EHR Test|MO9999|20190801110514-0400||RSP^K11^RSP\_K11|MO000020190801051434|T|2.5.1|||NE|NE|||||Z32^CDCPHINVS

MSA|AA|MODHSS38854000000232

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^^COLUMBIA^MO^65201^US^H|^PRN^CP^^^615^4444444

PID|1||907245^^^MODHSS^SR~496300^^^MODHSS^MR||SMITH^STEVE^TYLER^^^^L|CARPIO^FRANCISCO^^^^^M|20030219|M||2106-3^White^CDCREC|9208 EMERALD FOREST^^COLUMBIA^MO^65201^USA^M^^09001~9208 EMERALD FOREST^^COLUMBIA^MO^65201^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^MODHSS

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^^^MODHSS||||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^MODHSS

RXA|0|1|20160110|20160110|165^HPV9^CVX|0.5|mL^MilliLiter^UCUM||01^Historical Information - Source Unspecified^NIP001||HL7\_UNIT\_TST^^^MODHSS||||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^^^MODHSS^HL7LogIdIncomming~621556^^^MODHSS^WebServiceLogIdIncomming~MODHSS38854000000232^^^MODHSS^MessageControlId|907245^^^MODHSS^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|^~\&|WebIZ.19.2.20190329|MO9999|EHR Test|MODHSS|20190708115144-0400||RSP^K11^RSP\_K11|MO000020190708514417|T|2.5.1|||NE|NE|||||Z42^CDCPHINVS

MSA|AA|MODHSS38854000000232

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^^COLUMBIA^MO^65201^US^H|^PRN^CP^^^615^4444444

PID|1||907240^^^MODHSS^SR~494521^^^MODHSS^MR||SMITH^STEVE^TYLER^^^^L|HODGES^RACHEL^^^^^M|20030219|M||2054-5^Black or African-American^CDCREC|9208 EMERALD FOREST^^COLUMBIA^MO^65201^USA^M^^09001~9208 EMERALD FOREST^^COLUMBIA^MO^65201^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^MODHSS

RXA|0|1|20110415|20110415|83^Hep A, ped/adol, 2D^CVX|999|||01^Historical Information - Source Unspecified^NIP001||HL7\_UNIT\_TST^^^MODHSS||||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^MODHSS

RXA|0|1|20160110|20160110|165^HPV9^CVX|999|||01^Historical Information - Source Unspecified^NIP001||HL7\_UNIT\_TST^^^MODHSS||||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^MODHSS

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 ShowMeVax 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|^~\&|WebIZ.19.2.20190329|MO9999|EHR Test|MODHSS|20190702092201-0400||RSP^K11^RSP\_K11|MO000020190702220166|T|2.5.1|||NE|NE|||||Z31^CDCPHINVS

MSA|AA|MODHSS38854000000232

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

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

PID|1||907240^^^MODHSS^SR~494521^^^MODHSS^MR||JACKSON^PHIL^EVERETT^^^^L|RACHEL^BELL^^^^^M|20030219|M||2054-5^Black or African-American^CDCREC|9208 EMERALD FOREST^^COLUMBIA^MO^65201^USA^M^^09001~9208 EMERALD FOREST^^COLUMBIA^MO^65201^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^TREAVON^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^^^MODHSS^SR~5004^^^MODHSS^MR||JACKSON^PHIL^STEVE^^^^L|RACHEL^BELL^^^^^M|20030219|M||2054-5^Black or African-American^CDCREC|9208 EMERALD FOREST^^COLUMBIA^MO^65201^USA^M^^09001~9208 EMERALD FOREST^^COLUMBIA^MO^65201^USA^P^^09001|||||||||||2186-5^Not Hispanic or Latino^CDCREC||N|||||||||20190626

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

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

PID|3||907242^^^MODHSS^SR||JACKSON^PHIL^GREG^^^^L|RACHEL^BELL^^^^^M|20030219|M|||9208 EMERALD FOREST^^COLUMBIA^MO^65201^USA^M^^09001~9208 EMERALD FOREST^^COLUMBIA^MO^65201^USA^P^^09001|||||||||||||N|||||||||20190614

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

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

PID|4||907243^^^MODHSS^SR||JACKSON^PHIL^LARRY^^^^L|RACHEL^BELL^^^^^M|20030219|M|||9208 EMERALD FOREST^^COLUMBIA^MO^65201^USA^M^^09001~9208 EMERALD FOREST^^COLUMBIA^MO^65201^USA^P^^09001|||||||||||||N|||||||||20190614

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

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

PID|5||907244^^^MODHSS^SR||JACKSON^PHIL^CARL^^^^L|RACHEL^BELL^^^^^M|20030219|M|||9208 EMERALD FOREST^^COLUMBIA^MO^65201^USA^M^^09001~9208 EMERALD FOREST^^COLUMBIA^MO^65201^USA^P^^09001|||||||||||||N|||||||||20190614

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

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

PID|6||907245^^^MODHSS^SR||JACKSON^PHIL^MICHAEL^^^^L|RACHEL^BELL^^^^^M|20030219|M|||9208 EMERALD FOREST^^COLUMBIA^MO^65201^USA^M^^09001~9208 EMERALD FOREST^^COLUMBIA^MO^65201^USA^P^^09001|||||||||||||N|||||||||20190614

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

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

PID|7||907246^^^MODHSS^SR||JACKSON^PHIL^DANTE^^^^L|RACHEL^BELL^^^^^M|20030219|M|||9208 EMERALD FOREST^^COUMBIA^MO^65201^USA^M^^09001~9208 EMERALD FOREST^^COLUMBIA^MO^65201^USA^P^^09001|||||||||||||N|||||||||20190614

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

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

ZSA|AA^Application Accept - Good message with no problems^ENV0008|230146^^^MODHSS^HL7LogIdIncomming~621608^^^MODHSS^WebServiceLogIdIncomming~MODHSS38854000000232^^^MODHSS^MessageControlId

## **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 ShowMeVax 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|MO9999|EHR Test|MODHSS|20190708123102-0400||RSP^K11^RSP\_K11|MO000020190708310205|T|2.5.1|||NE|NE|||||Z33^CDCPHINVS

MSA|AA|MODHSS38854000000232

QAK|querytag|**NF**|Z34^Request Immunization History^HL70471

QPD|Z34^Request Immunization History^HL70471|querytag||FIONA^WATSON^^^^^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 ShowMeVax 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|MO9999|EHR Test|MODHSS|20190708144520-0400||RSP^K11^RSP\_K11|MO000020190708452046|T|2.5.1|||NE|NE|||||Z33^CDCPHINVS

MSA|AA|MODHSS38854000000232

QAK|querytag|**NF**|Z34^Request Immunization History^HL70471

QPD|Z34^Request Immunization History^HL70471|querytag|496300^^^^MR|JACKSON^PHIL^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 ShowMeVax 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|MO9999|EHR Test|MODHSS|20190708133913-0400||RSP^K11^RSP\_K11|MO000020190708391346|T|2.5.1|||NE|NE|||||Z32^CDCPHINVS

MSA|AA|MODHSS38854000000232

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

QPD|Z34^Request Immunization History^HL70471|querytag|496300^^^^MR|JACKSON^PHIL^MICHAEL ^^^^L|RACHEL^BELL^^^^^M|20030219|M

PID|1||907245^^^MODHSS^SR||SMITH^PHIL^MICHAEL^^^^L|RACHEL^BELL^^^^^M|20030219|M|||9208 EMERALD FOREST^^COLUMBIA^MO^65201^USA^M^^09001~9208 EMERALD FOREST^^COLUMBIA^MO^65201^USA^P^^09001|||||||||||||N|||||20190703|**Y**|||20190614

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

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

ORC|RE||14515672^MODHSS

RXA|0|1|20110415|20110415|83^Hep A, ped/adol, 2D^CVX|999|||01^Historical Information - Source Unspecified^NIP001||HL7\_UNIT\_TST^^^MODHSS||||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^MODHSS

RXA|0|1|20160110|20160110|165^HPV9^CVX|999|||01^Historical Information - Source Unspecified^NIP001||HL7\_UNIT\_TST^^^MODHSS||||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