**Quest to Cerner Outpatient Results Interface Requirements**

**Version 2.0**

**Updated By: Hope Kaczmarczyk/Sarah Thies**

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# **Document Control**

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| V1.1 | 5/27/16- 6/7/16 | Hope Kaczmarczyk | Updated with Cerner FSI Information |
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| V1.3 | 7/21/17 | Hope Kaczmarczyk | Updated Issues List with RFC Fix and go-live date on issue 9. |
| V1.4 | 01/10/18 | Sailaja Parimi | Updated for RFC 8051 break/fix: Encounters created by the mod object script now have a location of ‘Ref Lab Result’. |
| V1.5 | 04/12/18 | Hope Kaczmarczyk | Updated for RFC 10346 break/fix- blanking out of patient address/phone fields for unmatched patients. |
| V2.0 | 7/23/2019 | Sarah Thies | Updated existing interface script, oru\_BMGQuest\_in, to include Behavioral Health encounters |
|  |  |  |  |

# 1. Introduction

## 1.1 Purpose

The purpose of this document is to outline the Results interface for the reference laboratory, Quest, and BayCare BMG/BUC Patients. On June 18, 2019, the Soarian registered behavioral health outpatient and “Between” encounters were added to this interface.

## 1.2 Project Scope

Integration for this project includes a Cerner orders interface to Quest and a solicited/unsolicited results interface from Quest for BayCare BMG/BUC patients. Both interfaces pass through CloverLeaf and the Cerner Reference Lab Hub. This document is for the ORU results portion only.

BayCare is a beta-site for Cerner’s Reference Lab Standardization project. Cerner supplied generic coding requiring site-specific modifications along with update modifications. All coding will be on the BayCare Cerner side and CloverLeaf will be used as a pass-through only.

All Quest result messages go through a person matching logic of BayCare CMRN (CPI), DOB, and Sex. Any mismatch will cause the original result message to go to the Cerner Unmatched Person Queue (UMPQ) for manual verification prior to posting. Quest results post in Cerner PowerChart and are viewable at all BayCare Medical Group practices. The results also post to the ordering physician’s inbox in the Cerner Message Center.

## 1.3 Terminology Standards

### 1.3.1 Acronyms

**BMG** - BayCare Medical Group

**BUC** - BayCare Urge Care

**CMRN** – Community Medical Record Number

**DOB** - Date of Birth

**DTA** – Discrete Task Assay

**FIFO** – “first in, first out” is a method for organizing a data buffer. Messages are processed in and out of a queue

according to the order in which they were received.

**FSI** - Foreign System Interface; used by Cerner Millennium to exchange data with other Health Care Information

Systems.

**ESI** - External Systems Inbound; Cerner’s process for handling interfaced data received from a foreign system.

**ESI Log** -The External Systems Inbound log contains queue trace reports for all inbound messages to Cerner along with processing statuses of success, failure, or warning. Failures and Warnings are accompanied by error text which describes the issue. The ESI log is used for Cerner FSI troubleshooting by the Integration Team.

**NPI** – National Provider ID

**ORU** - Observation result / a solicited or unsolicited HL7 message

**RLN** - Cerner Reference Lab Network (Hub)

**TDB** – Cerner Transaction Database

**TNP** – Test Not Performed

**UMPQ** – Unmatched Person Queue is an application on Cerner where ORU result messages are sent when the

patient match fails on person matching criteria used by the contributor system (i.e., Patient’s CPI, DOB, and Sex).

Currently, Cerner has a glitch with this application: Users with more than 200 organizations on their Cerner User

Profile will not be able to see any of the messages that post to the UMPQ. Work-around required

additional user profiles with less than 200 Ambulatory organizations to be created for users manually

verifying ORU messages in the UMPQ.

### 1.3.2 Glossary

**Alias** - An identifier used to represent an item, such as a location, order, specimen type, or result.

**Contributor System –** External System that sends to and/or receives data from Cerner Millennium. A “Contributor System” is built on Cerner as part of an interface or data feed.

**Contributor Source –** A source created on Cerner used to identify inbound and/or outbound aliases for data sent to and received from Foreign Systems.

**Quest -** Reference Lab utilized by BayCare Medical Group based on patient’s insurance.

**PowerChart** – Cerner Electronic Medical Record System

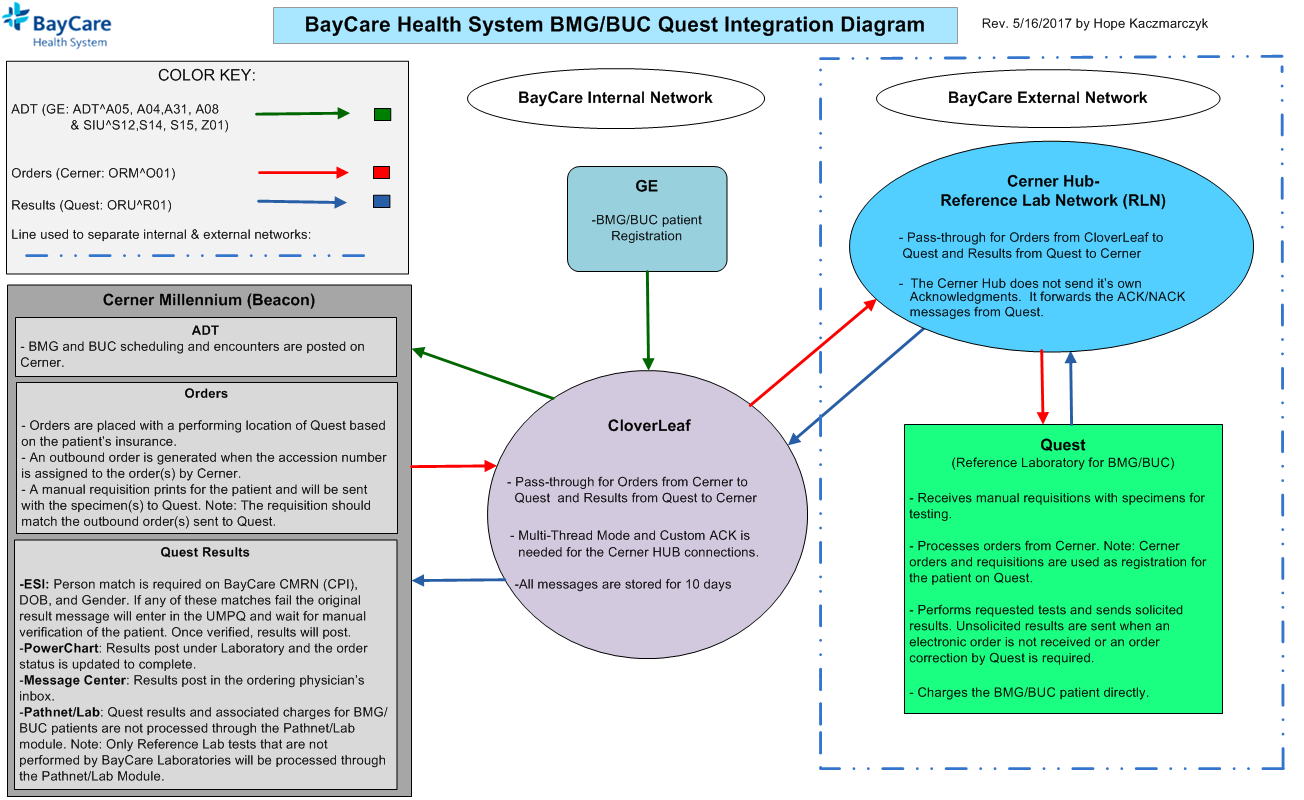
**Scripting –** Custom Cerner programs written to modify, format, and filter message transactions for the interfaces. The types of scripts used by FSI are Suppression, Route, Modify Object, Modify Original, Type, and ACK.

## 1.4 Document References

Ambulatory – Reference Lab Interface (A-RLI) Implementation Guide – Cerner November 2014

Cerner HL7 Specifications: Unit 10i - Result and Document Processing Inbound – Cerner 2016

# 2. Diagram



A Summary of the ESI Person and Encounter Match Logic for Ambulatory Quest result messages and a diagram:

When an ORU result message fails to match the patient’s CPI, DOB, and/or Sex, the patient identifier field (CPI) is changed to “ ”(blank), the unique Quest accession number is marked as the patient’s Referring MRN, and the result message is assigned to the unmatched contributor system. If the result message sent on a particular Quest accession number is the first one and it has failed patient CPI, DOB, and/or Sex match, it will also fail the person match for Referring MRN on the unmatched contributor system and go to the unmatched person queue (UMPQ) application where manual verification of the patient is required for the results to post. Because the patient CPI, DOB, and/or Sex match failed, the FIN if present in the message cannot be trusted so a RLN encounter number is created and stored in the BMG Ref Lab FIN Alias Pool.

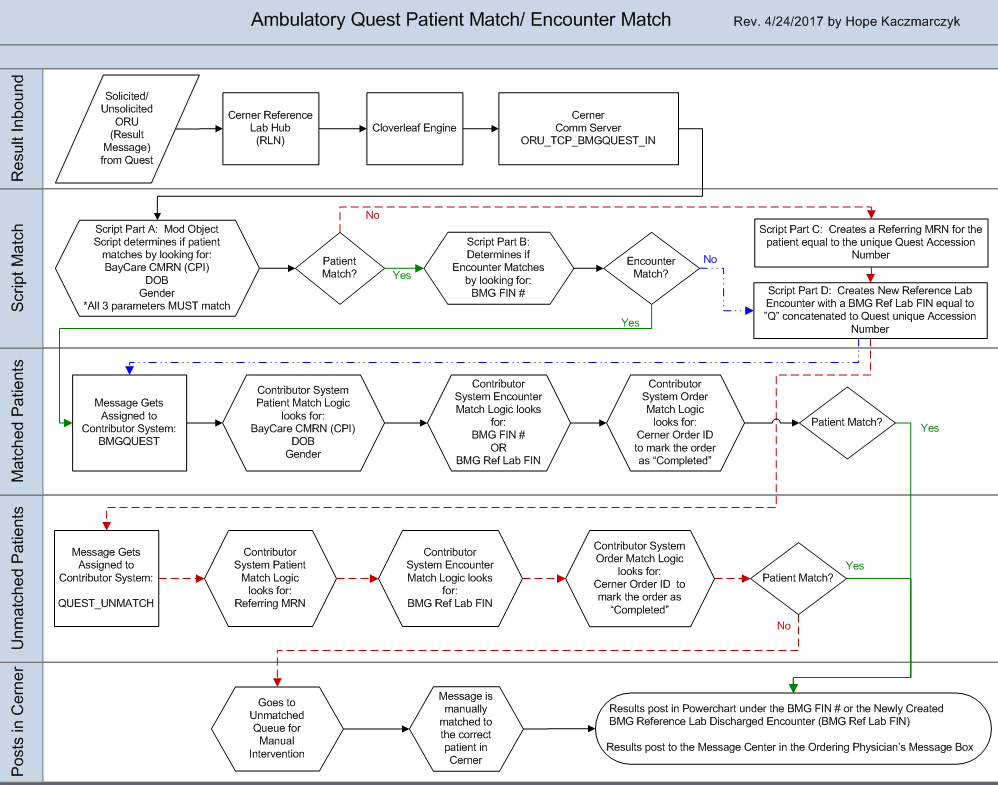
* Cerner’s coding logic will create a unique RLN FIN and encounter when the person or encounter match fails.

- RLN FIN= Q concatenated with Quest’s unique accession number (e.g.,QTM882410V).

- A new encounter is created with a location of ‘Ref Lab Result’, an admit date/time equal to the specimen

received date/time, and a discharge date equal to the admit date with a time of 2359.

- When a result message fails encounter match only (FIN is missing or incorrect for the patient), the results will

post on the patient under this new encounter number without the result message going to the UMPQ.  

# 3. Requirements

## 3.1 Functional Requirements

|  |  |  |
| --- | --- | --- |
| **Cerner** |  |  |
| **Number** | **Requirement Name** | **Requirement Description** |
| FR.2016.01.1  FR.2016.01.2  FR.2016.01.3  FR.2016.01.4 | **Scripts:**  - oru\_BMGQuest\_in  - STD\_Quest\_Route\_In  on **ComServer:** ORU\_TCP\_BMGQUEST\_ IN  **New ESI Servers:**  ORU\_BMGQUEST \_ESI with scripts:  - morg\_ambquest\_esi\_in  - mobj\_ambquest\_esi\_in  ORU\_BMGQUEST \_UNMATCH\_ESI  **New Cerner Contributor Systems:**  BMGQUEST  QUEST\_ UNMATCH  **New Cerner Contributor Source:**  BMGQuest | Scripts for Quest result messages inbound to Cerner:  - **Quest AMB Mod Object script** (oru\_BMGQuest\_in)  has logic for:   * MSH Processing * PID and PV1 Processing * ORC/OBR Processing * OBX/NTE Processing * Person match on patient’s CPI, DOB, and Sex. If any of these matches fail the QUEST\_UNMATCH contributor system is assigned along with the creation of a new RLN encounter. * Encounter match on the patient’s BMG FIN when the person match is successful. If the encounter match fails, a new RLN encounter is created. Since the person match was successful, the contributor system assigned is BMGQUEST and the result message will not go to the UMPQ.   - **oru\_BMGQuest\_in custom route script**: Logic to route the QUEST\_ UNMATCH contributor system assigned result messages to the ORU\_BMGQUEST \_UNMATCH\_ESI and the BMGQUEST contributor system assigned result messages to the ORU\_BMGQUEST\_ ESI.  - The **ORU\_BMGQUEST \_ESI server** only processes result messages for the BMGQUEST contributor system. The morg\_ambquest\_esi\_in mod original script and the  mobj\_ambquest\_esi\_in mod object script have logic to separate each OBR segment into separate ORU result messages when there is more than one OBR segment in the original message. This process allows for common results to post immediately even though one or more of the OBR segments in the message may have failed due to build/aliasing issues. Creating separate ORU result messages for each ORC/OBR segment also provides quicker and more accurate analysis of the missing build/aliasing for the Pathnet Team.  - The **ORU\_BMGQUEST \_UNMATCH\_ESI server** only processes result messages for the QUEST\_UNMATCH contributor system. These messages are not split out into separate ORU messages when there is more than one ORC/OBR since the majority of these messages will go to the UMPQ requiring manual verification. After the message is matched in the UMPQ, the message will be sent through this ESI server again and the message will either be successful or fail. A common cause for failure is a new result item that has not been aliased in BayCare Cerner.  BMGQUEST and QUEST\_UNMATCH are bi-directional contributor systems:  -Type: Unauth  - Organization: BayCare Health System  - Contributor Source: BMGQuest  - Alt Contributor Source: Invision  - Message Format: HL7 Standard V2.x  **Special Configurations**:  - Clinical Event processing done using Order Catalog/DTA.  **ESI Alias Translation**:  - ORC/OBR-02 Placer Order Id (Type: Internal Order Id)  - PID-02 External Person Id (Type: CMRN, ESI Assign Auth:  BayCareCMRN, Alias Pool: BayCare CMRN)  - PID-18 Patient Account Number (Type: FIN NBR, ESI Assign  Auth: BMGFN, Alias Pool: BMGFN)  - PID-18 Patient Account Number   * ESI Assign Auth: QUEST, Alias Pool: BMG Ref Lab FIN Alias Pool * ESI Assign Auth: BMGFN, Alias Pool: BMGF Alias Pool * ESI Assign Auth: BCFN, Alias Pool: BayCare FIN Alias Pool   **ESI Ensure Parameters**:  - Person = Exists ensure  - Encounter = Update ensure  - Event = Update ensure  - Order = Complete for ORU Message\*  \*This setting causes the BayCare order to auto complete when the Cerner order\_id is returned in ORC/OBR-02 of the ORU result message from Quest.  **Person Match**:  - Alias of BayCare CMRN = Match Required  - Date of Birth = Match Required  - Sex = Match Required  **Encounter Match**:  - FIN NBR = Match Required on patient’s BMG FIN, BayCare FIN or BMG Ref Lab FIN (i.e., “Q”, Unique Quest Accession Number)  **Personnel Alias**:  - All Personnel = NPI (Alias Pool: NPI Number)  **Order Match**:  - Internal Order Id = Match Required for automatic order completion to occur.  **Special Configurations**:  - Clinical Event processing done using Order Catalog/DTA.  - Person/Encounter Processing is set to queue unmatched  person result messages in UMPQ for review when person  match fails.  **ESI Alias Translation**:  - ORC/OBR-02 Placer Order Id (Type: Internal Order Id)  - PID-03 Internal Person Id (Type: Referring MRN, ESI Assign  Auth: QUEST\_MRN, Alias Pool: QUEST\_ACCESSION)  - PID-18 Patient Account Number (Type: FIN NBR, ESI Assign  Auth: QUEST, Alias Pool: BMG Ref Lab FIN Alias Pool)  **ESI Ensure Parameters**:  - Person = Add ensure  - Encounter = Update ensure  - Event = Update ensure  - Order = Complete for ORU Message\*  \*This setting causes the BayCare order to auto complete when the Cerner order\_id is returned in ORC/OBR-02 of the ORU result message from Quest.  **Person Match**:  - Alias of Referring MRN (Quest Unique Accession number)  Match Required.  This person match was added to prevent additional ORU result messages that were sent on the same Quest unique accession number from failing with no ability to post the updated or final result in Powerchart. By adding person match at the Referring MRN level, only the first ORU result message on the Quest accession number will go to the UMPQ for manual verification. Any additional ORU result messages sent on that Quest accession number will be automatically assigned to the QUEST\_AMB\_UNMATCH contributor system, will person match on the Referring MRN, and process without going to the UMPQ for manual verification.  **Encounter Match**:  - FIN NBR = Match Required on BMG Ref Lab FIN (i.e., “Q”, Unique Quest Accession Number)  **Personnel Alias**:  - All Personnel = NPI (Alias Pool: NPI Number)  **Order Match**:  - Internal Order Id = Match Required for automatic order completion to occur.  All Quest orders in code set 200 and result items in code set 72 have to have an inbound alias assigned to the contributor source of BMGQuest for the results to post in Cerner. |
| FR.2016.01.5  FR.2019.01.1 | **New Cerner Alias Pools:**  BMG Ref Lab FIN Alias Pool    QUEST\_ACCESSION  Unmatched Queue Encounter Type,  Encounter Class | BMG Ref Lab FIN Alias Pool was created for the unique FINs that are assigned for LabCorp and Quest when the ambulatory patient’s FIN in the result message fails to match or is blank.  QUEST\_ACCESSION was created for the patient’s referring MRN which is the unique Quest accession number. The referring MRN is only assigned to a patient when the result message fails person match of CMRN, DOB, and/or sex and uses the QUEST\_ UNMATCH contributor system.  Core Team: Code Set 71 New Encounter Type Ref Lab Result Encounter RLN and linked to Outpatient group in code set 69  Code Set 321 New Encounter Class Ref Lab Result Encounter RLN |

## 3.2 Messaging Protocols

Below are listed the details for the messaging protocols that will be leveraged for this integration.

### Inbound to the BayCare Cloverleaf

* TCP/IP Protocol
  + HL7 2.3 ORU messages from the Cerner RLN HUB to BayCare Cloverleaf
    - CloverLeaf is set up as Multi-Thread for this interface as per Cerner RLN Hub request.

### 3.2.2 Outbound from the BayCare Cloverleaf

* TCP/IP Protocol
  + HL7 2.3 Acknowledgment Messages returned from CloverLeaf to the Cerner RLN Hub
    - tpsHl7ParamAck (Parameters needed are provided by Cerner)

{SNDNGFC BAYC\_FL.AMB.QUEST.RLN} {MSGTYPE ACK} {MULTISERVER 1} {DEBUG 1}

* + HL7 2.3 ORU messages to the BayCare Cerner

### 3.2.3 Inbound from the Vendor

* TCP/IP Protocol
  + HL7 2.3 ORU messages from Quest to the Cerner RLN Hub
    - This interface is supported by Cerner and Quest

### 3.2.4 Outbound to the Vendor

* TCP/IP Protocol
  + HL7 2.3 Custom ACK message from the Cerner RLN Hub to Quest
    - This interface is supported by Cerner and Quest

# 4. HL7 Messaging

## 4.1 Messaging Format

Solicited and unsolicited ORU result messages are sent from Quest to BayCare Cerner through the Cerner RLN Hub and CloverLeaf using HL7 2.3 message format. Each ORU message is a discrete R01 result message for one or more Quest orders on a particular BayCare Ambulatory patient.

### 4.1.1 Segments

The segments utilized for this interface are:

MSH *Message Header*

PID *Patient ID segment*

[{NTE}] *Patient-level comments*

[PV1\*] *Patient Visit segment*

{

ORC\*\* *Common Order segment*

OBR\*\*\* *Observation Request segment*

[{

OBX *Observation / Result segment*

[{NTE}] *Observation / Result-level comments*

}]

}

*Notes: [Square Brackets] – Optional*

*{Curly Brackets} – Repeatable*

*\* (PVI) This segment is not sent by Quest and is only added to the message when the Encounter match fails.*

*\*\* (ORC) Quest only sends this segment once per ORU message.*

*\*\*\* (OBR)*

* + *This segment does not repeat for the messages processed by the QUEST\_AMB contributor system.*

*The mobj\_ambquest\_esi\_in mod object script and the morg\_ambquest\_esi\_in mod original script create*

*separate ORU result messages for each OBR segment as discussed under fundamental requirement*

*FR.2016.01.2.*

* + *The Cerner mod object script,* oru\_BMGQuest\_in*, moves the performing location from OBR.21 into a NTE segment following the 1st OBX segment when OBR.21.1 matches OBX.15 performing location code*.

### 4.1.2 Messaging Event Types

Below are the message types necessary for this integration

|  |  |
| --- | --- |
| **Event Type** | **Description** |
| ORU^R01 | Solicited/Unsolicited transmission of an observation/results |
| ACK | Custom Acknowledgment messages needed by the Cerner RLN HUB |

### 4.1.3 Cloverleaf Configuration Files

CloverLeaf is only a pass-through for Quest results on Ambulatory patients to BayCare Cerner. The Cloverleaf feed is a raw route with a proc that changes only two fields:

{DEBUG 0} {CRITERIA {

{{SOURCEPATH PID:2.3} {REPLACEVALUE {BayCareCMRN}}}

{{SOURCEPATH MSH:2.0} {REPLACEVALUE {BMGQUEST}}}

}}

### 4.1.4 Cloverleaf Site Location

bmg\_1\_p

## 4.2 Data Transformation Requirements

| **Field Description** | **HL7 Field Loc.** | **Required Y/N**  **And C for Conditional** | **Data Type** | **Length** | **Cerner Table (T) and/or Code Set (CS)** | **Notes** |
| --- | --- | --- | --- | --- | --- | --- |
| Message Header – Field Separator | MSH.1 | Y | ST | 01 |  | A Pipe (|) is used as the field separator and cannot be included in the transmitted data. |
| Encoding Characters | MSH.2 | Y | ST | 04 |  | “^~\&” These characters cannot be included in the transmitted data:  ^ used to separate components in a field  ~ used as a repetition separator  \ used as an escape delimiter  & used to separate sub-components |
| Sending Application | MSH.3 | Y | HD | 227 | CS 89 | Quest sends “LAB” and the CloverLeaf proc changes it to “BMGQUEST”. The Cerner Mod Object script, oru\_BMGQuest\_in, will change “BMGQUEST” to “QUEST\_\_UNMATCH” only when the person match fails.  This field identifies the contributor system used to process the message. |
| Sending Facility | MSH.4 | Y | HD | 227 |  | Quest sends “TMP” in this field. |
| Receiving Application | MSH.5 | N | HD | 227 | CS 15679 | Field is blank. |
| Receiving Facility | MSH.6 | Y | HD | 227 |  | Quest sends the Client Account Number of the BMG office that placed the order. |
| Date / Time of Message | MSH.7 | N | TS | 26 |  | YYYYMMDDHHMM |
| Message Type | MSH.9 | Y | MSG | 15 |  | HL7 message type and event triggering the message. |
| Type | MSH.9.1 | Y |  |  |  | “ORU” |
| Event | MSH.9.2 | Y |  |  |  | “R01” |
| Message Control ID | MSH.10 | Y | PT | 20 |  | Unique, generated ID from the sending system to be returned in MSA-2 of the ACK message. |
| Processing ID | MSH.11 | Y | ID | 01 |  | Defaulted to “P” for Production Environment. |
| Version ID | MSH.12 | Y | ID | 08 |  | 2.3.1 (HL7 version) |
| Set ID | PID.1 | N | SI | 04 |  | 1 |
| Patient ID (External ID) | PID.2 |  | CX | 20 |  |  |
| Patient ID | PID.2.1 | C | ST |  | T Person\_Alias | Patient CMRN (CPI) is sent in the order message and is expected to be returned in PID.2.1. This field will be cleared by the oru\_BMGQuest\_in mod object script only when person match fails and the contributor system of “QUEST\_ UNMATCH” is assigned. |
| Assigning  Authority | PID.2.4 | C | HD |  | T Person\_Alias  CS 263 | Quest sends “MRN” and the CloverLeaf proc changes it to “BayCareCMRN”. This value is used by the BMGQUEST contributor system to identify the alias type as “Community Medical Record Number” with an alias pool of “BayCare CMRN”. |
| Patient ID (Internal ID) | PID.3 |  | CX | 20 |  | This field is only used for person identification when the contributor system of QUEST\_ UNMATCH is assigned due to person match failure. |
| Patient ID | PID.3.1 | C | ST |  |  | Quest unique accession number. |
| Assigning  Authority | PID.3.4 | C | HD |  | T Person\_Alias  CS 263 | **Used only when person match fails**: The value of QUEST\_MRN is hard-coded by the oru\_BMGQuest\_in mod object script. This value is used by the QUEST \_UNMATCH contributor system to identify the alias type as “Referring MRN” with an alias pool of “QUEST\_ACCESSION”. |
| Alternate Patient ID | PID.4 | N | CX | 20 |  | BayCare sends this field blank to Quest in the Order (ORM) message.  Quest sends the patient FIN concatenated to a specimen status code\* from the bundler table concatenated to BayCare Cerner’s Conversation ID from order entry.  \*Specimen Status Codes:  For Nurse collect “No”  L = frozen, room temp, or refrigerated  APL =Pathology specimen  MICL = Microbiology specimen  UNKL = Unknown  For Nurse collect “Yes”:  FR = Frozen  RR = Room Temp or refrigerated  AP =Pathology specimen  MIC = Microbiology specimen  UNK = Unknown |
| Patient Name | PID.5 | Y | XPN | 250 | T Person\_Name | Components: <Last Name>^<First Name>^<Middle Initial or Name>^<Suffix>^<Prefix>^ <Degree> Note: If the transmitted name does not match the existing name in the table, ESI will update the existing name’s Name Type from CURRENT to PREVIOUS in the table. |
| Birth Date | PID.7 | Y | TS | 8 | T Person | YYYYMMDD |
| Sex | PID.8 | Y | ID | 1 | T Person  CS 57 | Patient’s Sex |
| Patient Address | PID.11 | N | XAD | 106 | T Address | Mailing Address of Patient  Components: <street address>^<other>^<city>^<state>^<zip code>  This field will be cleared by the oru\_BMGQuest\_in mod object script only when person match fails and the contributor system of “QUEST\_ UNMATCH” is assigned. |
| Phone Number | PID.13 | N | XTN | 25 | T Phone | Patient’s home phone number is sent with the area code in PID.13.6 and the number with no dashes in PID.13.7. No phone type is sent by Quest; Cerner’s default is HOME.  This field will be cleared by the oru\_BMGQuest\_in mod object script only when person match fails and the contributor system of “QUEST\_ UNMATCH” is assigned. |
| Patient Account Number | PID.18 |  |  |  |  |  |
| Patient  Account  # | PID.18.1 | C | CX | 20 |  | The patient’s FIN is sent in this field by Quest. If the person match fails, the oru\_BMGQuest\_in mod object script will creates a unique Quest FIN number by concatenating “Q” at the beginning of the Quest accession number copied from PID.3.1 to replace the number Quest sent in this field. |
| Assigning  Authority | PID.18.4 | C | HD |  | CS 263 | Quest returns the FIN tag sent in this field when received from the order ORM message.  “BMGFN” is no longer hard-coded in this field by the oru\_BMGQuest\_in mod object script. The script was updated to process the Assigning Auth. value sent in the HL7 message (BMGFN or BCFN).  **When person match fails:**  The FIN tag is replaced with “QUEST” by the oru\_BMGQuest\_in mod object script. This value is used by the QUEST\_UNMATCH contributor system to identify the alias type as “FIN NBR” with an alias pool of “BMG Ref Lab FIN Alias Pool”. |
| Assigning  Facility | PID.18.6 | N | HD |  |  | Quest sends “BAYC\_FL.AMB.QUEST.RLN” |
|  | PV1 |  |  |  |  | The PV1 segment is not sent by Quest. The Mod Object script,oru\_BMGQuest\_in, creates the PV1 segment when there is a patient and/or encounter match failure. |
| Patient Class | PV1.2 | Y\* | ID | 1 | CS 321 (linked to code set 69 under “Code Value Group” Tab)) | Populated with “RLN” for Ref Lab Results Encounter linked to “Outpatient” class by the oru\_BMGQuest\_in mod object script. \*Required if PV1 segment has been created. |
| Patient Location | PV1.3 |  |  |  | T Encounter |  |
| Point of  Service  Location | PV1.3.1 | Y\* |  |  | CS 220 | The oru\_BMGQuest\_in mod object script adds a value of “REF” which displays a location of ‘Ref Lab Result’ in Powerchart.  \* Required if PV1 segment has been created. |
| Facility ID | PV1.3.4 | Y\* |  |  | CS 220 | The oru\_BMGQuest\_in mod object adds a value of “REF” which displays a location of ‘Ref Lab Result’ in Powerchart.  \* Required if PV1 segment has been created. |
| Building | PV1.3.7 | Y\* |  |  | CS 220 | The oru\_BMGQuest\_in mod object script adds a value of “REF” which displays a location of ‘Ref Lab Result’ in Powerchart.  \* Required if PV1 segment has been created. |
| Patient Type | PV1.18 | Y\* | ID | 2 | CS 71 | Populated with “RLN” for Ref Lab Results Encounter by the oru\_BMGQuest\_in mod object script. \*Required if PV1 segment has been created. |
| Account Status | PV1.41 | Y\* | ID | 2 |  | Populated with “D” for Discharge by the oru\_BMGQuest\_in mod object script. \*Required if PV1 segment has been created. |
| Admit Date/Time | PV1.44 | Y\* | TS | 26 |  | Populated with the Specimen Received Date and Time from OBR.14by the oru\_BMGQuest\_in mod object script.  Format: YYYYMMDDHHMM  \* Required if PV1 segment has been created. |
| Discharge Date/Time | PV1.45 | Y\* | TS | 26 |  | Populated with the Specimen Received Date from OBR.14 and concatenated to the time of 235959 by the oru\_BMGQuest\_in mod object script.  Format: YYYYMMDDHHMM  \*Required if PV1 segment has been created. |
|  | ORC |  |  |  |  | Quest only sends the ORC segment with the first order in the result message. The Mod Object script,oru\_BMGQuest\_in, creates an ORC segment for the rest of the orders in the message populating only the ORC.4 field. |
| Order Control ID | N | Y | ID | 02 |  | “RE” for Results is sent from Quest. \* Only sent with the first order in the result message. |
| Placer Order Number | ORC.2 | N | CM | 75 |  | This number was sent to Quest in the order and is being returned.  ORC.2.1 = patient FIN concatenated to a specimen status code\* from the bundler table concatenated to BayCare Cerner’s Conversation ID from order entry.  \*Specimen Status Codes:  For Nurse collect “No”  L = frozen, room temp, or refrigerated  APL =Pathology specimen  MICL = Microbiology specimen  UNKL = Unknown  For Nurse collect “Yes”:  FR = Frozen  RR = Room Temp or refrigerated  AP =Pathology specimen  MIC = Microbiology specimen  UNK = Unknown  \* Only sent with the first order in the result message. |
| Filler Order Number | ORC.3 | N | CM | 75 |  | Quest unique accession number.  \* Only sent with the first order in the result message. |
| Placer Group Number | ORC.4 | N | CM | 75 |  | Quest sends this field blank in the first and only ORC segment sent in the result message.  The oru\_BMGQuest\_in mod object script populates this field with the OBR.19 Placer Field 2 data (same value as ORC.2).  The oru\_BMGQuest\_in mod object script creates an ORC segment for the rest of the orders in the message and populates only this field using OBR.19 Placer Field 2 data. |
| Order Status | ORC.5 | N | ID | 2 | CS 8 | Quest sends IP for In Process or CM for Complete. This field is not required for Laboratory results; OBR.25 is used.  \* Only sent with the first order in the result message. |
| Ordering Provider | ORC.12 |  | XCN | 80 | T CE\_EVENT\_PRSNL | Components: <ID Number>^<Last Name>^<First Name>^<Middle Initial or Name>^<Suffix>^<Prefix>^ <Degree>^<Source Table>^<Assigning Authority>^<Name Type Code>^<Identifier Check Digit>^Check Digit Scheme>^<Identifier Type Code> |
| ID  Number | ORC.12.1 | Y\* |  |  |  | Providers NPI number-  \* Only sent with the first order in the result message. |
| Last  Name | ORC.12.2 | Y\* |  |  |  | Provider last name-  \* Only sent with the first order in the result message. |
| First  Name | ORC.12.3 | Y\* |  |  |  | Provider first name or Initial-  \* Only sent with the first order in the result message. |
| Identifier  Type Code | ORC.12.13 | N |  |  |  | Quest sends “NPI”.  \* Only sent with the first order in the result message. |
| Set ID - OBR | OBR.1 | Y | SI | 04 |  | Starts at 1 and is incremented by 1 for all of the orders resulted in the ORU message. |
| Placer Order Number | OBR.2 | Y | CM | 75 |  | OBR.2.1 = patient FIN concatenated to a specimen status code\* from the bundler table concatenated to BayCare Cerner’s Conversation ID from order entry.  \*Specimen Status Codes:  For Nurse collect “No”  L = frozen, room temp, or refrigerated  APL =Pathology specimen  MICL = Microbiology specimen  UNKL = Unknown  For Nurse collect “Yes”:  FR = Frozen  RR = Room Temp or refrigerated  AP =Pathology specimen  MIC = Microbiology specimen  UNK = Unknown  **For solicited results:** The field is replaced with the BayCare Cerner Order ID number from OBR.18 by the oru\_BMGQuest\_in mod object script.  **For unsolicited results:** This field is populated with a Quest order identifier. |
| Filler Order Number | OBR.3 | Y | CM | 75 | T Clinical\_Event | Quest unique accession number. The field is replaced with the BayCare Cerner Order ID number from OBR.18 by the oru\_BMGQuest\_in mod object script. If OBR.18 is not populated, the Quest unique accession number remains in this field. |
| Universal Service ID | OBR.4 |  | CE | 200 | T Clinical\_Event | Quest Order Information |
| Test Code | OBR.4.1 | Y |  |  | CS 200 | Quest order alias for contributor source BMGQuest.  Note: Cerner recommends aliases be limited to 10-12 characters since functional size is limited for clinical event processing. |
| Test  Description | OBR.4.2 | Y |  |  |  | Quest Order Name (e.g., Basic Metabolic Panel) |
| Alternate  Test Code | OBR.4.4 | N |  |  |  | Quest sends the same data as OBR.4.1 and the oru\_BMGQuest\_in mod object script clears it. |
| Alternate  Test  Description | OBR.4.5 | N |  |  |  | Quest sends the same data as OBR.4.2 and the oru\_BMGQuest\_in mod object script clears it. |
| Observation (Collection) Date / Time | OBR.7 | Y | TS | 26 | T CE\_SPECIMEN\_  COLL | Specimen Collection Date/Time: YYYYMMDDHHMM |
| Specimen Received Date / Time | OBR.14 | Y | TS | 26 | T CE\_SPECIMEN\_ TRANS | The date/time when the specimen was received at Quest. Quest requires this information to post with the results so the oru\_BMGQuest\_in mod object script copies this field to the OBX NTE (result comment) segment. |
| Ordering Provider | OBR.16 |  | CN | 60 | T CE\_EVENT\_PRSNL | Components: <ID Number>^<Last Name>^<First Name>^<Middle Initial or Name>^<Suffix>^<Prefix>^ <Degree>^<Source Table>^<Assigning Authority>^<Name Type Code>^<Identifier Check Digit>^Check Digit Scheme>^<Identifier Type Code>  This field is required for the ordering physician to receive the results in his/her Cerner Message Center inbox. |
| ID  Number | OBR.16.1 | Y |  |  |  | Providers NPI number |
| Last  Name | OBR.16.2 | Y |  |  |  | Provider last name |
| First  Name | OBR.16.3 | Y |  |  |  | Provider first name or Initial |
| Identifier  Type Code | OBR.16.13 | N |  |  |  | Quest sends “NPI”. |
| Placer Field 1 | OBR.18 | N | ST | 60 |  | BayCare Cerner Order ID is submitted and expected to be returned in OBR.18.  **For unsolicited results:** The field will be blank. |
| Filler Field 1 | OBR.20 | N | ST | 60 |  | Patient FIN concatenated to a specimen status code\* from the bundler table concatenated to BayCare Cerner’s Conversation ID from order entry.  \*Specimen Status Codes:  For Nurse collect “No”  L = frozen, room temp, or refrigerated  APL =Pathology specimen  MICL = Microbiology specimen  UNKL = Unknown  For Nurse collect “Yes”:  FR = Frozen  RR = Room Temp or refrigerated  AP =Pathology specimen  MIC = Microbiology specimen  UNK = Unknown  **For unsolicited results:** The field will be blank. |
| Filler Field 2 | OBR.21 | Y | ST | 60 |  | Quest uses this field to send the Performing Laboratory location/director information. The oru\_BMGQuest\_in mod object script moves this information to an NTE segment following only the first OBX segment of the order that has the same performing location alias in OBX.15. If there is already a result comment following the OBX, this data will follow behind it.  Components sent by Quest: <Performing Lab Alias>^<Performing Lab Name>^<Performing Lab Address Line>^<Performing Lab City> ^< Performing Lab State >^  <Performing Lab Zip Code >^  <Performing Lab Director> |
| Results Report / Status Change – Date / Time | OBR.22 | Y | TS | 26 |  | Format: YYYYMMDDHHMM  Most recent date/time for result verification or status change. |
| Results Status | OBR.25 | Y | ID | 01 | CS 8  CS 6003  CS 6004 | Codes for the status of the results at the order level (OBR Order Status):  I = In Progress  P = Preliminary  F = Auth (Verified)  C = Modified (Corrected)  The contributor systems, QUEST\_AMB and QUEST\_AMB\_UNMATCH, are set up to allow the order status to change to In-Process or Complete when the ORU result message is received. |
| Quantity / Timing | OBR.27.4 | Y | TS | 26 |  | Format: YYYYMMDDHHMM  Field is copied from OBR.22 by the the oru\_BMGQuest\_in mod object script. This field is needed for the results to populate the ordering physician’s inbox correctly. |
| Set ID – OBX (may be multiple segments) | OBX.1 | Y | SI | 10 |  | Starts at 1 and is incremented by 1 for all of the results associated with the OBR segment. |
| Value Type | OBX.2 | Y | ID | 02 | CS 53 | The value type of the result sent in OBX.5:  ST = String  NM = Number  TX = Text  CE = Coded Element  These are valid values with default processing that do not require aliasing on code set 53 (EVENT\_CLASS).  All “NM” values are changed to “ST” by the oru\_BMGQuest\_in mod object script. |
| Observation Identifier | OBX.3 |  | CE | 80 |  | Quest Result Information |
| Procedure  ID | OBX.3.1 | Y | ID |  | T REF\_CD\_MAP\_  HEADER  T REF\_CD\_MAP\_  DETAIL  T Clinical\_Event | LOINC code sent by Quest for the result item. This value will post to the REF tables so the LOINC code is associated with the clinical event being written.  The oru\_BMGQuest\_in mod object script moves this data to OBX.4 |
| Procedure  Description | OBX.3.2 | N |  |  |  | Quest LOINC procedure name  The oru\_BMGQuest\_in mod object script moves this data to OBX.5 |
| Coding  scheme | OBX.3.3 | N |  |  | CS 400 | Quest is sending “LN” the alias for LOINC on code set 400 (Source Vocabulary) for the contributor source of BMGQuest. This assigns the LOINC value in OBX.3.1 to the result clinical event.  The oru\_BMGQuest\_in mod object script moves this data to OBX.6 |
| Alternate  Procedure  ID | OBX.3.4 | N | ST |  | T Clinical\_Event  CS 72 | Quest result item alias  Note: Cerner recommends aliases be limited to 10-12 characters since functional size is limited for clinical event processing.  The oru\_BMGQuest\_in mod object script moves this data to OBX.1 |
| Alternate  Procedure  Description | OBX.3.5 | N | ST |  | T Clinical\_Event | Quest result item name  The oru\_BMGQuest\_in mod object script moves this data to OBX.2 |
| Alternate  Coding  scheme | OBX.3.6 | N | ID |  | T Code\_Value  CS 73 | Quest sends “QDITMP” in this field. “QDITMP” is currently not aliased to code set 73 so the primary contributor source assigned to the contributor system of BMGQUEST or QUEST \_UNMATCH will be used to identify the alias sent in OBX.3.4. The primary contributor source is BMGQuest.  The oru\_BMGQuest\_in mod object script moves this data to OBX.3 |
| Observation Value | OBX.5 | Y | R | 64k | T CE\_STRING\_  RESULT  T CE\_MICRO  BIOLOGY  T CE\_BLOB | The actual Quest result for the result item identified in OBX.3. This field varies based on the data type sent in OBX.2    Note: Quest sends microbiology culture and antimicrobial susceptibility results in NTE (result comment) segments following the OBX segment containing the culture title (i.e., same as the order name in OBR.4.2). See Sample Message # 4 as an example. |
| Units | OBX.6 | C | CE | 60 | T CE\_STRING\_  RESULT  CS 54 | Quest sends the “Unit of Measure” when applicable. This value is the alias for contributor source BMGQuest in code set 54: Units of Measure. |
| Reference Range | OBX.7 | C | ST | 60 | T Clinical\_Event | Quest does not use the sub-components of 7.2 Low and 7.3 High. The Cerner ESI server will parse out the normal\_low and normal\_high elements from the range provided  Examples:  |134-144| range parses to normal\_low of 134 and normal\_high of 144.  | >59| range parses to normal\_low of 59 and normal\_high of empty.  | <73 | range parses to normal\_low of empty and normal\_high of 73. |
| Abnormal Flags | OBX.8 | C | ID | 10 | T Clinical\_Event  CS 52 | Quest sends the “Abnormal Flags” when applicable. This value is the alias for contributor source BMGQuest in Codeset 52: RES\_INTRP:  A = ABN (Abnormal)  L = Low  LL = <LLOW (Extreme Low)  H = HI (High)  HH = >HHI (Extreme High) |
| Observation Result Status | OBX.11 | Y | ID | 02 | T Clinical\_Event  CS 8 | Codes for the status of the result item:  I = In Progress  P = Preliminary  F = Auth (Verified)  C = Modified (Corrected)  X = result item (DTA) was deleted on the Quest side and does not need to be performed or result could not be performed. Quest sends OBX.5 with the result of DNR (Do Not Report). |
| Date / Time of Observation | OBX.14 | Y | TS | 26 |  | Format: YYYYMMDDHHMM  The Date/Time when the result item in OBX.3 was performed/resulted. |
| Producer ID Code | OBX.15 | Y | CE | 60 |  | Unique ID of the Performing Laboratory for this result. This value is matched to the value sent by Quest in OBR.21.1 so the proper performing lab information will be sent in an NTE segment created by the oru\_BMGQuest\_in mod object script to follow only the first OBX segment in the ORU result message. |
| Set ID – NET (may be multiple segments) | NTE.1 | C | SI | 4 |  | Starts at 1 and is incremented by 1 for all of the result comments associated with the OBX segment. The oru\_BMGQuest\_in mod object script will renumber the NTE segments when applicable following the 1st OBX only -   * Converting the patient level (PID NTE) comments to result comments (OBX NTE). * Copying the "Quest specimen received date/time" from OBR.14 to a result comment (OBX NTE). * Adding the Performing Laboratory information.   The oru\_BMGQuest\_in mod object script will put the result comments in the following order when all are present in the ORU message:   * 1st- NTE result comment associated with the OBX segment. * 2nd - "Quest specimen received date/time" following the first OBX segment only. * 3rd - Performing Lab location information following the first OBX segment only. * 4th - Patient Level (PID) comment following the first OBX segment only. |
| Source of Comment | NTE.2 | C | ID | 8 | T CE\_EVENT\_  NOTE  CS 14 | Quest sends this field blank and the oru\_BMGQuest\_in mod object script changes it to “RC” which is aliased on code set 14 for “Result Comment” |
| Comment | NTE.3 | C | FT | 64k | T CE\_EVENT\_  NOTE  T LONG\_TEXT  T LONG\_BLOB | 1st- The NTE result comment associated with the OBX segment.  2nd - The oru\_BMGQuest\_in mod object script will move the OBR.14 information into NTE segments following only the first OBX segment preceded by "Specimen received d/t:".  3rd - The oru\_BMGQuest\_in mod object script will move the OBR.21.1 information into NTE segments following only the first OBX segment:   1. “Lab test performed by:” 2. Laboratory Name 3. Laboratory Address 4. Laboratory Director   4th - The oru\_BMGQuest\_in mod object script will copy the Patient Level (PID) comment (if present) into NTE segments following the performing lab location for the first OBX segment only:   1. “Quest Comments:” 2. PID- NTE.3 comments |

Data Type Acronyms:

CE - CODED ENTRY

CM - COMPOSITE

CWE- CODED WITH EXCEPTIONS

CX - EXTENDED COMPOSITE ID WITH CHECK DIGIT

DT - DATE

DTM - DATE/TIME

FT - FORMATTED TEXT DATA

HD - HIERARCHIC DESIGNATOR

ID - CODED VALUE FOR HL7 DEFINED TABLESMSG - MESSAGE TYPE

MSG - MESSAGE TYPE

PT - PROCESSING TYPE

R - WIDE VARIETY OF DATA TYPES

SI - SEQUENCE ID

ST - STRING DATA

TS - TIME STAMP

XAD - EXTENDED ADDRESS

XCN - EXTENDED COMPOSITE ID NUMBER AND NAME FOR PERSONS

XPN - EXTENDED PERSON NAME

XTN - EXTENDED TELECOMMUNICATION NUMBER

## 4.3 Sample Messages

**Sample Message # 1:**

**Inbound Quest Result Message (RAW):**

MSH|^~\&|BMGQUEST|TMP||66006394|20170502082414||ORU^R01|80000008000009590397|P|2.3.1

PID|1|903646714^^^BayCareCMRN|TM406457X| 3555487L63689|TEST^STEPHANIE^M||19810127|F|||5000 S THATCHER AVE^^TAMPA^FL^33614||^^^^^813^4009999|||||9555487^^^BMGFN ^^BAYC\_FL.AMB.QUEST.RLN|999999999 NTE|1|TX|FASTING:YES

ORC|RE|9555487L63689|TM406457X||IP|||||||1609079797^TEST^ROBERT ^^^^^^^^^^NPI

OBR|1|9555487L63689|TM406457X|8821^TISSUE TRANSGLUTAMINASE AB, IGA^^8821^TISSUE TRANSGLUTAMINASE AB, IGA|||20170501085400|||||||20170501085500||1609079797^TEST^ROBERT^^^^^^^^^^NPI||10930944557|9555487L63689||AMD^Quest Diagnostics /Nichols Chantilly-Chantilly VA^14225 Newbrook Drive^Chantilly^VA^20151-2228^Patrick W Mason M.D.,PhD|20170502082200|||I

OBX| 1|ST|31017-7^tTG IgA Ser-aCnc^LN^40000700^TISSUE TRANSGLUTAMINASE AB, IGA^QDITMP||SEE COMMENT||||||I|||20170502082200|AMD

OBR |2|9555487L63689|TM406457X|6399^CBC (INCLUDES DIFF/PLT)^^6399^CBC (INCLUDES DIFF/PLT)|||20170501085400|||||||20170501085500|| 1609079797^TEST^ROBERT^^^^^^^^^^NPI||10930941545|9555487L63689||TP^Quest Diagnostics-Tampa^4225 E Fowler Ave^Tampa^FL^ 33617-2026^Glen L Hortin|20170502082200|||F

OBX|1|NM|6690-2^WBC # Bld Auto^LN^30000000^WHITE BLOOD CELL COUNT^QDITMP||5.6|Tho usand/uL|3.8-10.8|N|||F|||20170502082200|TP OBX|2|NM|789-8^RBC # Bld Auto^LN^30000100^RED BLOOD CELL COUNT^QDITMP||4.29|Milli on/uL|3.80-5.10|N|||F|||20170502082200|TP OBX|3|NM|718-7^Hgb Bld-mCnc^LN^30000200^HEMOGLOBIN^QDITMP||11.5|g/dL|11.7-15.5|L||| F|||20170502082200|TP

OBX|4|NM|4544-3^Hct VFrBld Auto^LN^30000300^HEMATOCRIT^QDITMP||34.7|%|35.0-45.0|L|||F|||20170502082200|TP

OBX|5|NM|787-2^MCV RBC Auto^LN^30000400^MCV^QDITMP||80.9|fL|80.0-100.0|N|||F|||20170502082200|TP

OBX|6|NM|785-6^MCH RBC Q n Auto^LN^30000500^MCH^QDITMP||26.8|pg|27.0-33.0|L|||F|||20170502082200|TP

OBX|7|NM|786-4^MCHC RBC Auto-mCnc^LN^30000600^MCHC ^QDITMP||33.1|g/dL|32.0-36.0|N|||F|||20170502082200|TP

OBX|8|NM|788-0^RDW RBC Auto-Rto^LN^30000700^RDW^QDITMP||13.5|%|11.0-15 .0|N|||F|||20170502082200|TP

OBX|9|NM|777-3^Platelet # Bld Auto^LN^30000800^PLATELET COUNT^QDITMP||294|Thousand/uL|140-400|N| ||F|||20170502082200|TP OBX|10|NM|776-5^PMV Bld Rees-Ecker^LN^30004600^MPV^QDITMP||10.2|fL|7.5-12.5|N|||F|||20170502082200|TP

OBX|11|NM|751-8^Neutrophils # Bld Auto^LN^30001700^ABSOLUTE NEUTROPHILS^QDITMP||3410|cells/uL|1500-7800|N|||F|||201705020822 00|TP OBX|12|ST|26507-4^Neuts Band # Bld^LN^30001110^ABSOLUTE BAND NEUTROPHILS^QDITMP||DNR|cells/uL|0-750|N|||X|||20170502082 200|TP OBX|13|ST|30433-7^Metamyelocytes # Bld^LN^30001310^ABSOLUTE METAMYELOCYTES^QDITMP||DNR|cells/uL|0|N|||X|||201705020822 00|TP OBX|14|ST|30446-9^Myelocytes # Bld^LN^30001510^ABSOLUTE MYELOCYTES^QDITMP||DNR|cells/uL|0|N|||X|||20170502082200|TP

OBX |15|ST|26523-1^Promyelocytes # Bld^LN^30001530^ABSOLUTE PROMYELOCYTES^QDITMP||DNR|cells/uL|0|N|||X|||20170502082200|TP OBX|16 |NM|731-0^Lymphocytes # Bld Auto^LN^30002110^ABSOLUTE LYMPHOCYTES^QDITMP||1725|cells/uL|850-3900|N|||F|||20170502082200|TP OB X|17|NM|742-7^Monocytes # Bld Auto^LN^30002400^ABSOLUTE MONOCYTES^QDITMP||297|cells/uL|200-950|N|||F|||20170502082200|TP

OBX| 18|NM|711-2^Eosinophil # Bld Auto^LN^30002700^ABSOLUTE EOSINOPHILS^QDITMP||140|cells/uL|15-500|N|||F|||20170502082200|TP

OBX| 19|NM|704-7^Basophils # Bld Auto^LN^30003000^ABSOLUTE BASOPHILS^QDITMP||28|cells/uL|0-200|N|||F|||20170502082200|TP

OBX|20|ST |30376-8^Blasts # Bld^LN^30003500^ABSOLUTE BLASTS^QDITMP||DNR|cells/uL|0|N|||X|||20170502082200|TP

OBX|21|ST|30392-5^nRBC # B ld^LN^30003610^ABSOLUTE NUCLEATED RBC^QDITMP||DNR|cells/uL|0|N|||X|||20170502082200|TP

OBX|22|NM|770-8^Neutrophils/leuk NFr Bld Auto^LN^30000900^NEUTROPHILS^QDITMP||60.9|%||N|||F|||20170502082200|TP

OBX|23|ST|764-1^Neuts Band/leuk NFr Bld Manual^LN^3 0001100^BAND NEUTROPHILS^QDITMP||DNR|%||N|||X|||20170502082200|TP OBX|24|ST|740-1^Metamyelocytes/leuk NFr Bld Manual^LN^30001 300^METAMYELOCYTES^QDITMP||DNR|%||N|||X|||20170502082200|TP OBX|25|ST|749-2^Myelocytes/leuk NFr Bld Manual^LN^30001500^MYELOC YTES^QDITMP||DNR|%||N|||X|||20170502082200|TP

OBX|26|ST|783-1^Promyelocytes/leuk NFr Bld Manual^LN^30001520^PROMYELOCYTES^QDI TMP||DNR|%||N|||X|||20170502082200|TP

OBX|27|NM|736-9^Lymphocytes/leuk NFr Bld Auto^LN^30001800^LYMPHOCYTES^QDITMP||30.8|%||N |||F|||20170502082200|TP

OBX|28|ST|13046-8^Variant Lymphs/leuk NFr Bld^LN^30002000^REACTIVE LYMPHOCYTES^QDITMP||DNR|%|0-10|N| ||X|||20170502082200|TP OBX|29|NM|5905-5^Monocytes/leuk NFr Bld Auto^LN^30002200^MONOCYTES^QDITMP||5.3|%||N|||F|||20170502082 200|TP

OBX|30|NM|713-8^Eosinophil/leuk NFr Bld Auto^LN^30002500^EOSINOPHILS^QDITMP||2.5|%||N|||F|||20170502082200|TP

OBX|31|N M|706-2^Basophils/leuk NFr Bld Auto^LN^30002800^BASOPHILS^QDITMP||0.5|%||N|||F|||20170502082200|TP

OBX|32|ST|709-6^Blasts/leu k NFr Bld Manual^LN^30003400^BLASTS^QDITMP||DNR|%||N|||X|||20170502082200|TP

OBX|33|ST|19048-8^nRBC/100 WBC Bld-Rto^LN^300036 00^NUCLEATED RBC^QDITMP||DNR|/100 WBC|0|N|||X|||20170502082200|TP

OBX|34|ST|8251-1^Service Cmnt XXX-Imp^LN^30004200^COMMENT(S )^QDITMP||DNR|||N|||X|||20170502082200|TP OBR|3|9555487L63689|TM406457X|7573^IRON AND TOTAL IRON BINDING CAPACITY^^7573^IRON AND TOTAL IRON BINDING CAPACITY|||20170501085400|||||||20170501085500||1609079797^TEST^ROBERT^^^^^^^^^^NPI||1093094355 3|9555487L63689||TP^Quest Diagnostics-Tampa^4225 E Fowler Ave^Tampa^FL^33617-2026^Glen L Hortin|20170502082200|||F

OBX|1|NM|2 498-4^Iron SerPl-mCnc^LN^25002600^IRON, TOTAL^QDITMP||44|mcg/dL|40-190|N|||F|||20170502082200|TP

OBX|2|NM|2500-7^TIBC SerPl-m Cnc^LN^25002700^IRON BINDING CAPACITY^QDITMP||398|mcg/dL (calc)|250-450|N|||F|||20170502082200|TP

OBX|3|NM|2502-3^Iron Satn M Fr SerPl^LN^25002800^% SATURATION^QDITMP||11|% (calc)|11-50|N|||F|||20170502082200|TP

OBR|4|9555487L63689|TM406457X|457^FERRI TIN^^457^FERRITIN|||20170501085400|||||||20170501085500| |1609079797^TEST^ROBERT^^^^^^^^^^NPI||10930942423|9555487L6368 9||TP^Quest Diagnostics-Tampa^4225 E Fowler Ave^Tampa^FL^33617-2026^Glen L Hortin|20170502082200|||I

OBX|1|ST|2276-4^Ferritin SerPl-mCnc^LN^55059300^FERRITIN^QDITMP||SEE COMMENT||||||I|||20170502082200|TP

**Person match was successful on Cerner for patient’s CPI, DOB, and Sex; encounter match was successful on patient’s FIN. The contributor system of BMGQUEST was assigned and the message was split out into four separate ORU messages. (See *fundamental requirement FR.2016.01.2 and 4.2 Data Transformation Requirements for details.*):**

Message 1:

MSH|^~\&|BMGQUEST|TMP||66006394|20170502082414||ORU^R01|80000000000959080397|P|2.3.1

PID|1|903646714^^^BayCareCMRN|TM406457X| 3555487L63689|TEST^STEPHANIE^M||19810127|F|||5000 S THATCHER AVE^^TAMPA^FL^33614||^^^^^813^4009999|||||9555487^^^BMGFN ^^BAYC\_FL.AMB.QUEST.RLN|999999999 NTE|1|TX|FASTING:YES

ORC|RE|9555487L63689|TM406457X|9555487L63689|IP|||||||1609079797^CRESC ENTINI^ROBERT^^^^^^^^^^NPI OBR|1|10930944557|10930944557|8821^TISSUE TRANSGLUTAMINASE AB, IGA|||20170501085400|||||||20170501 085500||1609079797^TEST^ROBERT||10930944557|9555487L63689||9555487L63689|20170502082200|||I||^^^20170501085400

OBX|1|S T|40000900^TISSUE TRANSGLUTAMINASE AB, IGG^QDITMP^32998-^tTG IgG Ser-aCnc^LN||SEE COMMENT||||||I|||20170502082200|AMD

NTE|1|RC|

NTE|2|RC|Specimen Received d/t: 05/01/2017 08:55:00

NTE|3|RC|

NTE|4|RC|Lab test performed by:

NTE|5|RC|Quest Diagnostics/Nichols Chantilly-Chantilly VA

NTE|6|RC|14225 Newbrook Drive

NTE|7|RC|Chantilly, VA 20151-2228

NTE|8|RC|Patrick W Mason M.D.,PhD

NTE|9|RC|

NTE|10|RC|Quest Comments:

NTE|11|RC|FASTING:YES

Message 2:

MSH|^~\&|BMGQUEST|TMP||66006394|20170502082414||ORU^R01|80000000000959080397|P|2.3.1 PID|1|903646714^^^BayCareCMRN|TM406457X| 3555487L63689|TEST^STEPHANIE^M||19810127|F|||5000 S THATCHER AVE^^TAMPA^FL^33614||^^^^^813^4009999|||||9555487^^^BMGFN ^^BAYC\_FL.AMB.QUEST.RLN|999999999 NTE|1|TX|FASTING:YES

ORC||||9555487L63689

OBR|2|10930941545|10930941545|6399^CBC (INCLUDES DIFF/PLT)|||20170501085400|||||||20170501085500| |1609079797^TEST^ROBERT||10930941545|9555487L63689||9555487L63689|2017 0502082200|||F||^^^20170501085400

OBX|1|ST|30000000^WHITE BLOOD CELL COUNT^QDITMP^6690-2^WBC # Bld Auto^LN||5.6|Thousand/uL|3.8-10.8|N|||F|||20170502082200|TP

NTE|1|RC|

NTE|2|RC|Specimen Received d/t: 05/01/2017 08:55:00

NTE|3|RC|

NTE|4|RC|Lab test performed by:

NTE|5|RC|Quest Diagnostics-Tampa

NTE|6|RC|4225 E Fowler Ave

NTE|7|RC|Tampa, FL 33617-2026

NTE|8|RC|Glen L Hortin

NTE|9|RC|

NTE|10|RC|Quest Comments:

NTE|11|RC|FASTING:YES

OBX|2|ST|30000100^RED BLOOD CELL COUNT^QDITMP^789-8^RBC # Bld Auto^LN||4.29|Million/uL|3.80-5.10|N|||F||| 20170502082200|TP

OBX|3|ST|30000200^HEMOGLOBIN^QDITMP^718-7^Hgb Bld-mCnc^LN||11.5|g/dL|11.7-15.5|L|||F|||20170502082200|TP OBX|4|ST|30000300^HEMATOCRIT^QDITMP^4544-3^Hct VFr Bld Auto^LN||34.7|%|35.0-45.0|L|||F|||20170502082200|TP

OBX|5|ST|30000400^MCV^QDITMP^787-2^MCV RBC Auto^LN||80.9|fL|80.0-100.0|N|||F|||20170502082200|TP

OBX|6|ST|30000500^MCH^QDITMP^785-6^MCH RBC Qn Auto^LN||26.8|pg|27.0-33.0|L|||F|||20170502082200|TP OBX|7|ST|30000600^MCHC^QDITMP^786-4^MCHC RBC Auto-mCnc^LN||33.1|g/dL|32.0-36.0|N|||F|||201705 02082200|TP OBX|8|ST|30000700^RDW^QDITMP^788-0^RDW RBC Auto-Rto^LN||13.5|%|11.0-15.0|N|||F|||20170502082200|TP

OBX|9|ST|30000800^PLATELET COUNT^QDITMP^777-3^Platelet # Bld Aut^LN||294|Tho usand/uL|140-400|N|||F|||20170502082200|TP

OBX|10|ST|30004600^MPV^QDITMP^776-5^PMV Bld Rees-Ecker^LN||10.2|fL|7.5-12.5|N|||F|||20170502082200|TP

OBX|11|ST|30001700^ABSOLUTE NEUTROPHILS^QDITMP^751-8^Neutrophils # Bld^LN||3410|cells/uL|1500-7800|N|||F|||20170502082200|TP

OBX|12|ST|30001110^ABSOLUTE BAND NEUTROPHILS^QDITMP^26507-^Neuts Band # Bld^LN||DNR|cells/uL|0-750|N|||X| ||20170502082200|TP

OBX|13|ST|30001310^ABSOLUTE METAMYELOCYTES^QDITMP^30433-^Metamyelocytes # B^LN||DNR|cells/uL|0|N|||X| ||2017 0502082200|TP

OBX|14|ST|30001510^ABSOLUTE MYELOCYTES^QDITMP^30446-^Myelocytes # Bld^LN||DNR|cells/uL|0|N|||X| ||20170502082200|TP

OBX|15|ST|30001530^ABSOLUTE PROMYELOCYTES^QDITMP^26523-^Promyelocytes # Bl^LN||DNR|cells/uL|0|N|||X| ||20170502082200|TP

OBX|16|ST|30002110^ABSOLUTE LYMPHOCYTES^QDITMP^731-0^Lymphocytes # Bld^LN||1725|cells/uL|850-390 0|N|||F| ||20170502082200|TP

OBX|17|ST|30002400^ABSOLUTE MONOCYTES^QDITMP^742-7^Monocytes # Bld Au^LN||297|cells/uL|200-950|N|||F| ||20170502082200|TP

OBX|18|S T|30002700^ABSOLUTE EOSINOPHILS^QDITMP^711-2^Eosinophil # Bld A^LN||140|cells/uL|15-500|N|||F|

||20170502082200|TP

OBX|19|ST|30003000^ABSOLUTE BASOPHILS^QDITMP^704-7^Basophils # Bld Au^LN||28|cells/uL|0-200|N|||F|

||20170502082200|TP

OBX|20|ST|30003500^ABSOLUTE BLASTS^QDITMP^30376-^Blasts # Bld^LN||DNR|cells/uL|0|N|||X|

||20170502082200|TP

OBX|21|ST|30003610^ABSOLUTE NUCLEATED RBC^QDITMP^30392-^nRBC # Bld^LN||DNR|cells/uL|0|N|||X|

||20170502082200|TP

OBX|22|ST|30000900^NEUTROPHILS^QDITMP^770-8^Neutrophils/leuk N^LN||60.9| %||N|||F|||20170502082200|TP

OBX|23|ST|30001100^BAND NEUTROPHILS^QDITMP^764-1^Neuts Band/leuk NF^LN||DNR|%||N|||X|||20170502082200|TP

OBX|24|ST|30001300^METAMYELOCYTES^QDITMP^740-1^Metamyelocytes/leu^LN||DNR|%||N|||X|||20170502082200|TP OBX|25|ST|30001500^MYELOCYTES^QDITMP^749-2^Myelocytes/leuk NF^LN||DNR|%||N|||X|||20170502082200|TP

OBX|26|ST|30001520^PROMYELOCYTES^QDITMP^783-1^Promyelocytes/leuk^LN||DNR|%||N|||X|||20170502082200|TP OBX|27|ST|30001800^LYMPHOCYTES^QDITMP^736-9^Lymphocytes/leuk N^LN||30.8|%||N|||F|||20170502082200 |TP

OBX|28|ST|30002000^REACTIVE LYMPHOCYTES^QDITMP^13046-^Variant Lymphs/leu^LN||DNR|%|0-10|N|||X|

||20170502082200|TP

OBX|29|ST|30002200^MONOCYTES^QDITMP^5905-5^Monocytes/leuk NFr^LN||5.3|%|| N|||F|||20170502082200|TP OBX|30|ST|30002500^EOSINOPHILS^QDITMP^713-8^Eosinophil/leuk NF^LN||2.5|%||N|||F|||20170502082200|TP

OBX|31|ST|30002800^BASOPHILS^QDITMP^706-2^Basophils/leuk NFr^LN||0.5|%||N|||F|||20170502082200|TP OBX|32|ST|30003400^BLASTS^QDITMP^709-6^Blasts/leuk NFr Bl^LN||DNR|%||N|||X|||20170502082200|TP

OBX|33|ST|30003600^NUCLEATED RBC^QDITMP^19048-^nRBC/100 WBC Bld-R^LN||DNR|/100 WBC|0|N|||X|

||20170502082200|TP

OBX|34|ST|30004200^COMMENT(S)^QDITMP^8251-1^Service Cmnt XXX-I^LN||DNR|||N|||X|||20170502082200|TP

Message 3:

MSH|^~\&|BMGQUEST|TMP||66006394|20170502082414||ORU^R01|80000000000959080397|P|2.3.1 PID|1|903646714^^^BayCareCMRN|TM406457X| 3555487L63689|TEST^STEPHANIE^M||19810127|F|||5000 S THATCHER AVE^^TAMPA^FL^33614||^^^^^813^4009999|||||9555487^^^BMGFN ^^BAYC\_FL.AMB.QUEST.RLN|999999999 NTE|1|TX|FASTING:YES

ORC||||9555487L63689

OBR|3|10930943553|10930943553|7573^IRON AND TOTAL IRON BINDING CAPACITY|||20170501085400 |||||||20170501085500||1609079797^TEST^ROBERT||10930943553|9555487L63689||35554 87L63689|20170502082200|||F||^^^20170501085400

OBX|1|ST|25002600^IRON,TOTAL^QDITMP^2498-4^Iron SerPl-mCnc^LN||44|mcg/dL|40-190|N|||F|||20170502082200|TP

NTE|1|RC|

NTE|2|RC|Specimen Received d/t: 05/01/2017 08:55:00

NTE|3|RC|

NTE|4|RC|Lab test performed by:

NTE|5|RC| Quest Diagnostics-Tampa

NTE|6|RC|4225 E Fowler Ave

NTE|7|RC|Tampa, FL 33617-2026

NTE|8|RC|Glen L Hortin

NTE|9|RC|

NTE|10 |RC|Quest Comments:

NTE|11|RC|FASTING:YES

OBX|2|ST|25002700^IRON BINDING CAPACITY^QDITMP^2500-7^TIBC SerPl-mCnc^LN||398|mcg/dL (calc)|250-450|N|||F|||20170 502082200|TP

OBX|3|ST|25002800^% SATURATION^QDITMP^2502-3^Iron Satn MFr SerP^LN||11|% (calc)|11-50|N|||F|||20170502082200|TP

Message 4:

MSH|^~\&|BMGQUEST|TMP||66006394|20170502082414||ORU^R01|80000000000959080397|P|2.3.1 PID|1|903646714^^^BayCareCMRN|TM406457X| 3555487L63689|TEST^STEPHANIE^M||19810127|F|||5000 S THATCHER AVE^^TAMPA^FL^33614||^^^^^813^4009999|||||9555487^^^BMGFN ^^BAYC\_FL.AMB.QUEST.RLN|999999999 NTE|1|TX|FASTING:YES

ORC||||9555487L63689

OBR|4|10930942423|10930942423|457^FERRITIN|||20170501085400|||||||20170501085500| |1609079797^TEST^ROBERT||10930942423|9555487L63689||9555487L63689|20170502082200|||I||^^^20170501085400

OBX|1|ST|55059300^FERRITIN^QDITMP^2276-4^Ferritin SerPl-mCn^LN||SEE COMMENT||||||I|||20180412000200|TP

NTE|1|RC|

NTE|2|RC|Specimen Received d/t: 05/01/2017 08:55:00

NTE|3|RC|

NTE|4|RC|Lab test performed by:

NTE|5|RC| Quest Diagnostics-Tampa

NTE|6|RC|4225 E Fowler Ave 4

NTE|7|RC|Tampa, FL 33617-2026

NTE|8|RC|Glen L Hortin

NTE|9|RC|

NTE|10 |RC|Quest Comments:

NTE|11|RC|FASTING:YES

**Sample Message # 2:**

**Inbound Quest Result Message (RAW):**

MSH|^~\&|BMGQUEST|TMP||121429|20170502100323||ORU^R01|80000000000959166371|P|2.3.1 PID|1|90022581^^^BayCareCMRN|TM299505X|2301737RR22027|TEST^ELIZABETH^P||19640116|F|||5000 E BAY COURT AVE^^TAMPA^FL^33611||^^^^^813^6209999|||||0010155^^^^^BAYC\_FL.AMB.QUEST.RLN|999999999

NTE|1|TX|AN UPDATE OR CORRECTION HAS BEEN MADE TO NAME ORC|RE|2301737RR22027|TM299505X||CM|||||||1023013646^SEUFERT^NANCY^M^^^^^^^^^NPI OBR|1|2301737RR22027|TM299505X|10231^COMPREHENSIVE METABOLIC PANEL^^10231^COMPREHENSIVE METABOLIC PANEL|||20170428082300|||||||20170428082500||1023013646^SEUFERT^NANCY^M^^^^^^^^^NPI|||||TP^Quest Diagnostics-Tampa^4225 E Fowler Ave^Tampa^FL^33617-2026^Glen L Hortin|20170502100100|||F

OBX|1|NM|2345-7^Glucose SerPl-mCnc^LN^25000000^GLUCOSE^QDITMP||108|mg/dL|65-99|H|||F|||20170502100100|TP NTE|1||

NTE|2|| Fasting reference interval

NTE|3||

NTE|4||For someone without known diabetes, a glucose value

NTE|5||between 100 and 125 mg/dL is consistent with

NTE|6||prediabetes and should be confirmed with a

NTE|7||follow-up test.

NTE|8||

OBX|2|NM|3094-0^BUN SerPl-mCnc^LN^25000100^UREA NITROGEN (BUN)^QDITMP||20|mg/dL|7-25|N|||F|||20170502100100|TP

OBX|3|NM|2160-0^Creat SerPl-mCnc^LN^25000200^CREATININE^QDITMP||0.78|mg/dL|0.50-1.05|N|||F|||20170502100100|TP

NTE|1||For patients >49 years of age, the reference limit

NTE|2||for Creatinine is approximately 13% higher for people

NTE|3||identified as African-American.

NTE|4||

OBX|4|NM|33914-3^GFR/BSA.pred SerPl MDRD-vRate^LN^25000210^eGFR NON-AFR. AMERICAN^QDITMP||87|mL/min/1.73m2|> OR = 60|N|||F|||20170502100100|TP

OBX|5|NM|48643-1^GFR/BSA pred.black SerPl MDRD-vRate^LN^25000220^eGFR AFRICAN AMERICAN^QDITMP||101|mL/min/1.73m2|> OR = 60|N|||F|||20170502100100|TP

OBX|6|ST|3097-3^BUN/Creat SerPl^LN^25000300^BUN/CREATININE RATIO^QDITMP||NOT APPLICABLE|(calc)|6-22||||F|||20170502100100|TP

OBX|7|NM|2951-2^Sodium SerPl-sCnc^LN^25000400^SODIUM^QDITMP||139|mmol/L|135-146|N|||F|||20170502100100|TP OBX|8|NM|2823-3^Potassium SerPl-sCnc^LN^25000500^POTASSIUM^QDITMP||4.5|mmol/L|3.5-5.3|N|||F|||20170502100100|TP

OBX|9|NM|2075-0^Chloride SerPl-sCnc^LN^25000600^CHLORIDE^QDITMP||105|mmol/L|98-110|N|||F|||20170502100100|TP

OBX|10|NM|2028-9^CO2 SerPl-sCnc^LN^25000700^CARBON DIOXIDE^QDITMP||27|mmol/L|20-31|N|||F|||20170502100100|TP

OBX|11|NM|17861-6^Calcium SerPl-mCnc^LN^25001000^CALCIUM^QDITMP||9.8|mg/dL|8.6-10.4|N|||F|||20170502100100|TP

OBX|12|NM|2885-2^Prot SerPl-mCnc^LN^25001300^PROTEIN, TOTAL^QDITMP||7.0|g/dL|6.1-8.1|N|||F|||20170502100100|TP

OBX|13|NM|1751-7^Albumin SerPl-mCnc^LN^25001400^ALBUMIN^QDITMP||4.6|g/dL|3.6-5.1|N|||F|||20170502100100|TP

OBX|14|NM|10834-0^Globulin Ser Calc-mCnc^LN^25001500^GLOBULIN^QDITMP||2.4|g/dL (calc)|1.9-3.7|N|||F|||20170502100100|TP

OBX|15|NM|1759-0^Albumin/Glob SerPl^LN^25001600^ALBUMIN/GLOBULIN RATIO^QDITMP||1.9|(calc)|1.0-2.5|N|||F|||20170502100100|TP

OBX|16|NM|1975-2^Bilirub SerPl-mCnc^LN^25001700^BILIRUBIN, TOTAL^QDITMP||0.7|mg/dL|0.2-1.2|N|||F|||20170502100100|TP

OBX|17|NM|6768-6^ALP SerPl-cCnc^LN^25002000^ALKALINE PHOSPHATASE^QDITMP||92|U/L|33-130|N|||F|||20170502100100|TP

OBX|18|NM|1920-8^AST SerPl-cCnc^LN^25002300^AST^QDITMP||35|U/L|10-35|N|||F|||20170502100100|TP OBX|19|NM|1742-6^ALT SerPl-cCnc^LN^25002400^ALT^QDITMP||35|U/L|6-29|H|||F|||20170502100100|TP OBR|2|2301737RR22027|TM299505X|16558^VITAMIN D, 1,25 DIHYDROXY LC/MS/MS^^16558^VITAMIN D, 1,25 DIHYDROXY LC/MS/MS|||20170428082300|||||||20170428082500||1023013646^SEUFERT^NANCY^M^^^^^^^^^NPI|||||AMD^Quest Diagnostics/Nichols Chantilly-Chantilly VA^14225 Newbrook Drive^Chantilly^VA^20151-2228^Patrick W Mason M.D.,PhD|20170502100100|||F

OBX|1|NM|62290-2^1,25(OH)2D SerPl-mCnc^LN^86003320^VITAMIN D, 1,25 (OH)2, TOTAL^QDITMP||50|pg/mL|18-72||||F|||20170502100100|AMD

OBX|2|NM|1649-3^Vit D1,25 SerPl-mCnc^LN^86003321^VITAMIN D3, 1,25 (OH)2^QDITMP||50|pg/mL|||||F|||20170502100100|AMD

OBX|3|ST|62291-0^1,22(OH)2D2 SerPl-mCnc^LN^86003322^VITAMIN D2, 1,25 (OH)2^QDITMP||<8|pg/mL|||||F|||20170502100100|AMD

NTE|1||

NTE|2||Vitamin D3, 1,25(OH)2 indicates both endogenous

NTE|3||production and supplementation. Vitamin D2, 1,25(OH)2

NTE|4||is an indicator of exogeous sources, such as diet or

NTE|5||supplementation. Interpretation and therapy are based

NTE|6||on measurement of Vitamin D,1,25(OH)2, Total.

NTE|7||

NTE|8||

NTE|9||This test was developed and its analytical

NTE|10||performance characteristics have been determined

NTE|11||by Quest Diagnostics Nichols Institute, Chantilly, VA.

NTE|12||It has not been cleared or approved by the FDA. This

NTE|13||assay has been validated pursuant to the CLIA

NTE|14||regulations and is used for clinical purposes.

NTE|15||

**Person match was successful on Cerner for patient’s CPI, DOB, and Gender. The encounter match failed on patient’s FIN causing the creation of a BMG Ref Lab FIN for the patient (i.e., “Q” concatenated in front of the unique Quest accession number) in PID.18. The contributor system of BMGQUEST was assigned and the message was split out into two separate ORU messages. (See *fundamental requirement FR.2016.01.2 and 4.2 Data Transformation Requirements for details.*):**

Message 1:

MSH|^~\&|BMGQUEST|TMP||121429|20170502100323||ORU^R01|80000000000959166371|P|2.3.1 PID|1|90022581^^^BayCareCMRN|TM299505X|230 1737RR22027|TEST^ELIZABETH^P||19640116|F|||5000 E BAY COURT AVE^^TAMPA^FL^33611||^^^^^813^6209999|||||QTM299505X^^^QUEST^^B AYC\_FL.AMB.QUEST.RLN|999999999 NTE|1|TX|AN UPDATE OR CORRECTION HAS BEEN MADE TO NAME

PV1||A|REF^^^REF^^^REF|||||||||||||||A |||||||||||||||||||||||D|||20170428082500|201704282359 ORC|RE|2301737RR22027|TM299505X||CM|||||||1023013646^SEUFERT^NANCY^M^^ ^^^^^^^NPI OBR|1|2301737RR22027|TM299505X|10231^COMPREHENSIVE METABOLIC PANEL|||20170428082300|||||||20170428082500| |10230136 46^SEUFERT^NANCY^M||||||20170502100100|||F||^^^20170428082300 OBX|1|ST|25000000^GLUCOSE^QDITMP^2345-7^Glucose SerPl-mCnc^LN||108|mg/dL|65-99|H|||F|||201705021 00100|TP

NTE|1|RC|

NTE|2|RC| Fasting reference interval

NTE|3|RC|

NTE|4|RC|For someone without known diabetes, a glucose value

NTE|5|RC|between 100 and 125 mg/dL is consistent with

NTE|6|RC|prediabetes and should be confirmed with a

NTE|7 |RC|follow-up test.

NTE|8|RC|

NTE|9|RC|

NTE|10|RC|Specimen Received d/t: 04/28/2017 08:25:00

NTE|11|RC|

NTE|12| RC|Lab test performed by:

NTE|13|RC|Quest Diagnostics-Tampa

NTE|14|RC|4225 E Fowler Ave

NTE|15|RC|Tampa, FL 33617-2026

NTE|16 |RC|Glen L Hortin

NTE|17|RC|

NTE|18|RC|Quest Comments:

NTE|19|RC|AN UPDATE OR CORRECTION HAS BEEN MADE TO NAME

OBX|2|ST|25000100^UREA NITROGEN (BUN)^QDITMP^3094-0^BUN SerPl-mCnc^LN||20|mg/dL|7-25|N|||F| ||20170502100100|TP

OBX|3|ST|25000200^CREATININE^QDITMP^2160-0^Creat SerPl-mCnc^LN||0.78|mg/dL|0.50-1.0 5|N|||F|||20170502100100|TP

NTE|1|RC|For patients >49 years of age, the reference limit

NTE|2|RC|for Creatinine is approximately 13% higher for people

NTE|3|RC|identified as African-American.

NTE|4|RC|

OBX|4|ST|25000210^eGFR NON-AFR. AMERICAN^QDITMP^33914-^GFR/BSA.pred SerPl^LN||87 |mL/min/1.73m2|> OR = 60|N|||F| ||20170502100100|TP

OBX|5|ST|25000220^eGFR AFRICAN AMERICAN^QDITMP^48643-^GFR/BSA pred.black^LN||101|mL/min/1.73m2|> OR = 60|N|||F|||20170502100100|TP

OBX|6|ST|25000300^BUN/CREATININE RATIO^QDITMP^3097-3^BUN/Creat SerPl^LN||NOT APPLICABLE|(calc)|6-22||||F|

||20170502100100|TP

OBX|7| ST|25000400^SODIUM^QDITMP^2951-2^Sodium SerPl-sCnc^LN||139|mmol/L|135-146|N|||F|

||20170502100100|TP

OBX|8|ST|25000500^POTASSIUM^QDITMP^2823-3^Potassium SerPl-sC^LN||4.5|mmol/L|3.5-5.3|N|||F| ||20170502100100|TP

OBX|9|ST|25000600^CHLORIDE^QDITMP^2075-0^Chloride SerPl-sCn^LN ||105|mmol/L|98-110|N|||F|

||20170502100100|TP

OBX|10|ST|25000700^CARBON DIOXIDE^QDITMP^2028-9^CO2 SerPl-sCnc^LN||27|mmol/L|20-31|N|||F|

||20170502100100|TP

OBX|11|ST|25001000^CALCIUM^QDITMP^17861-^Calcium SerPl-mCnc^LN||9.8|mg/dL|8.6-10.4|N|||F|

||20170502100100|TP

OBX|12|ST|25001300^PROTEIN, TOTAL^QDITMP^2885-2^Prot SerPl-mCnc^LN||7.0|g/dL|6.1-8.1|N|||F| ||20170502100100|TP

OBX|13|ST|25001400^ALBUMIN^QDITMP^1751-7^Albumin SerPl-mCnc^LN||4.6|g/dL|3.6 -5.1|N|||F|

||20170502100100|TP

OBX|14|ST|25001500^GLOBULIN^QDITMP^10834-^Globulin Ser Calc-^LN||2.4|g/dL (calc)|1.9-3.7|N|||F|

||20170502100100|TP

OBX|15|ST|25001600^ALBUMIN/GLOBULIN RATIO^QDITMP^1759-0^Albumin/Glob SerPl^LN||1.9|(calc)|1.0-2.5|N|||F|

||20170502100100|TP

OBX|16|ST|25001700^BILIRUBIN, TOTAL^QDITMP^1975-2^Bilirub SerPl-mCnc^LN||0.7|mg /dL|0.2-1.2|N|||F| ||20170502100100|TP

OBX|17|ST|25002000^ALKALINE PHOSPHATASE^QDITMP^6768-6^ALP SerPl-cCnc^LN||92|U/L|33-130|N|||F|

||20170502100100|TP

OBX|18|ST|25002300^AST^QDITMP^1920-8^AST SerPl-cCnc^LN||35|U/L|10-35|N|||F|||20170502100100|TP

OBX|19|ST|25002400^ALT^QDITMP^1742-6^ALT SerPl-cCnc^LN ||35|U/L|6-29|H|||F|||20170502100100|TP

Message 2:

MSH|^~\&|BMGQUEST|TMP||121429|20170502100323||ORU^R01|80000000000959166371|P|2.3.1 PID|1|90022581^^^BayCareCMRN|TM299505X|230 1737RR22027|TEST^ELIZABETH^P||19640116|F|||5000 E BAY COURT AVE^^TAMPA^FL^33611||^^^^^813^6209999|||||QTM299505X^^^QUEST^^B AYC\_FL.AMB.QUEST.RLN|999999999 NTE|1|TX|AN UPDATE OR CORRECTION HAS BEEN MADE TO NAME

PV1||A|REF^^^REF^^^REF|||||||||||||||A |||||||||||||||||||||||D|||20170428082500|201704282359 OBR|2|2301737RR22027|TM299505X|16558^VITAMIN D, 1,25 DIHYDROXYLC/MS/MS|||20170428082300|||||| |20170428082500||1023013646^SEUFERT^NANCY^M||||||20170502100100|||F||^^^20170428082300

OBX|1|ST|86003320^VITAMIN D, 1,25 (OH)2, TOTAL^QDITMP^62290-^1,25(OH)2D SerPl-m^LN||50|pg/mL|18-72||||F|

||20170502100100|AMD

NTE|1|RC|

NTE|2|RC|Specimen Received d/t: 04/28/2017 08:25:00

NTE|3|RC|

NTE|4|RC|Lab test performed by:

NTE|5|RC|Quest Diagnostics/Nichols Chantilly-Chantilly VA

NTE|6|RC|14225 Newbrook Drive

NTE|7|RC|Chantilly, VA 20151-2228

NTE|8|RC|Patrick W Mason M.D.,PhD

NTE|9|RC|

NTE|10|RC |Quest Comments:

NTE|11|RC|AN UPDATE OR CORRECTION HAS BEEN MADE TO NAME

OBX|2|ST|86003321^VITAMIN D3, 1,25 (OH)2^QDITMP^1649-3^Vit D1,25 SerPl-mC^LN||50|pg/m L|||||F|

||20170502100100|AMD

OBX|3|ST|86003322^VITAMIN D2, 1,25 (OH)2^QDITMP^62291-^1,22(OH)2D2 SerPl-^LN||<8|pg/mL|||||F|

||20170502100100|AMD

NTE|1|RC|

NTE|2|RC|Vitamin D3, 1,25(OH)2 indicates both endogenous

NTE|3|RC|production and supplementation. Vitamin D2, 1,25(OH)2

NTE|4|RC |is an indicator of exogeous sources, such as diet or

NTE|5|RC|supplementation. Interpretation and therapy are based

NTE|6|R C|on measurement of Vitamin D,1,25(OH)2, Total.

NTE|7|RC|

NTE|8|RC|

NTE|9|RC|This test was developed and its analytical

NTE |10|RC|performance characteristics have been determined

NTE|11|RC|by Quest Diagnostics Nichols Institute, Chantilly, VA.

NTE| 12|RC|It has not been cleared or approved by the FDA. This

NTE|13|RC|assay has been validated pursuant to the CLIA

NTE|14|RC| regulations and is used for clinical purposes.

NTE|15|RC|

**Sample Message # 3:**

**Inbound Quest Result Message (RAW):**

MSH|^~\&|BMGQUEST|TMP||66008690|20170502102932||ORU^R01|80000000000959188722|P|2.3.1 PID|1|02011982SLK^^^BayCareCMRN|TM302904 X||TEST^SETH^L||19820201|M|||6100 9THST N^^ST PETERSBURG^FL^33703||^^^^^813^7601212|||||0002589^^^^^BAYC\_FL.AMB.QUEST.RLN

NTE|1|TX|FASTING:YES

ORC|RE|0002589|TM302904X||CM

OBR|1|0002589|TM302904X|10231^ COMPREHENSIVE METABOLIC PANEL^^10231^COMPREHENSIVE METABOLIC PANEL|||20170428090500|||||||20170428090500|||||||TP^Quest Diagn ostics-Tampa^4225 E Fowler Ave^Tampa^FL^33617-2026^Glen L Hortin|20170502102700|||F

OBX|1|NM|2345-7^Glucose SerPl-mCnc^LN^250 00000^GLUCOSE^QDITMP||94|mg/dL|65-99|N|||F|||20170502102700|TP

NTE|1||

NTE|2|| Fasting reference interval

NTE|3||

OBX|2|NM|3094-0^BUN SerPl-mCnc^LN^25000100^UREA NITROGEN (BUN)^QDITMP||14|mg/dL|7-25|N|||F|||20170502102700|TP

OBX|3|NM|2160 -0^Creat SerPl-mCnc^LN^25000200^CREATININE^QDITMP||0.99|mg/dL|0.60-1.35|N|||F|||20170502102700|TP

OBX|4|NM|33914-3^GFR/BSA.pr ed SerPl MDRD-vRate^LN^25000210^eGFR NON-AFR. AMERICAN^QDITMP||98|mL/min/1.73m2|> OR = 60|N|||F|||20170502102700|TP

OBX|5|NM| 48643-1^GFR/BSA pred.black SerPl MDRD-vRate^LN^25000220^eGFR AFRICAN AMERICAN^QDITMP||114|mL/min/1.73m2|> OR = 60|N|||F|||201 70502102700|TP

OBX|6|ST|3097-3^BUN/Creat SerPl^LN^25000300^BUN/CREATININE RATIO^QDITMP||NOT APPLICABLE|(calc)|6-22||||F|||201 70502102700|TP

OBX|7|NM|2951-2^Sodium SerPl-sCnc^LN^25000400^SODIUM^QDITMP||140|mmol/L|135-146|N|||F|||20170502102700|TP OBX|8|NM|2823-3^Potassium SerPl-sCnc^LN^25000500^POTASSIUM^QDITMP||4.5|mmol/L|3.5-5.3|N|||F|||20170502102700|TP

OBX|9|NM|2075-0^C hloride SerPl-sCnc^LN^25000600^CHLORIDE^QDITMP||103|mmol/L|98-110|N|||F|||20170502102700|TP

OBX|10|NM|2028-9^CO2 SerPl-sCnc^L N^25000700^CARBON DIOXIDE^QDITMP||29|mmol/L|20-31|N|||F|||20170502102700|TP

OBX|11|NM|17861-6^Calcium SerPl-mCnc^LN^25001000^ CALCIUM^QDITMP||10.0|mg/dL|8.6-10.3|N|||F|||20170502102700|TP

OBX|12|NM|2885-2^Prot SerPl-mCnc^LN^25001300^PROTEIN, TOTAL^QDI TMP||7.5|g/dL|6.1-8.1|N|||F|||20170502102700|TP

OBX|13|NM|1751-7^Albumin SerPl-mCnc^LN^25001400^ALBUMIN^QDITMP||4.7|g/dL|3.6- 5.1|N|||F|||20170502102700|TP

OBX|14|NM|10834-0^Globulin Ser Calc-mCnc^LN^25001500^GLOBULIN^QDITMP||2.8|g/dL (calc)|1.9-3.7|N |||F|||20170502102700|TP

OBX|15|NM|1759-0^Albumin/Glob SerPl^LN^25001600^ALBUMIN/GLOBULIN RATIO^QDITMP||1.7|(calc)|1.0-2.5|N| ||F|||20170502102700|TP

OBX|16|NM|1975-2^Bilirub SerPl-mCnc^LN^25001700^BILIRUBIN, TOTAL^QDITMP||1.2|mg/dL|0.2-1.2|N|||F|||20 170502102700|TP

OBX|17|NM|6768-6^ALP SerPl-cCnc^LN^25002000^ALKALINE PHOSPHATASE^QDITMP||66|U/L|40-115|N|||F|||20170502102700 |TP

OBX|18|NM|1920-8^AST SerPl-cCnc^LN^25002300^AST^QDITMP||16|U/L|10-40|N|||F|||20170502102700|TP OBX|19|NM|1742-6^ALT SerPl -cCnc^LN^25002400^ALT^QDITMP||13|U/L|9-46|N|||F|||20170502102700|TP OBR|2|0002589|TM302904X|496^HEMOGLOBIN A1c^^496^HEMOGLOBI N A1c|||20170428090500|||||||20170428090500| ||||||TP^Quest Diagnostics-Tampa^4225 E Fowler Ave^Tampa^FL^33617-2026^Glen L Hor tin|20170502102700|||F OBX|1|NM|4548-4^Hgb A1c MFr Bld^LN^50026400^HEMOGLOBIN A1c^QDITMP||5.1|% of total Hgb|<5.7|N|||F|||201 70502102700|TP

NTE|1||For the purpose of screening for the presence of

NTE|2||diabetes:

NTE|3||

NTE|4||<5.7% Consisten t with the absence of diabetes

NTE|5||5.7-6.4% Consistent with increased risk for diabetes

NTE|6|| (prediabetes )

NTE|7||> or =6.5% Consistent with diabetes

NTE|8||

NTE|9||This assay result is consistent with a decreased risk

NTE|10||o f diabetes.

NTE|11||

NTE|12||Currently, no consensus exists regarding use of

NTE|13||hemoglobin A1c for diagnosis of diabete s in children.

NTE|14||

NTE|15||According to American Diabetes Association (ADA)

NTE|16||guidelines, hemoglobin A1c <7.0% re presents optimal

NTE|17||control in non-pregnant diabetic patients. Different

NTE|18||metrics may apply to specific patient p opulations.

NTE|19||Standards of Medical Care in Diabetes(ADA).

NTE|20||

OBR|3|0002589|TM302904X|36127^TSH W/REFLEX TO FT 4^^36127^TSH W/REFLEX TO FT4|||20170428090500||| ||||20170428090500|||||||TP^Quest Diagnostics-Tampa^4225 E Fowler Ave^Tampa^F L^33617-2026^Glen L Hortin|20170502102700|||F

OBX|1|NM|3016-3^TSH SerPl-aCnc^LN^55080410^TSH W/REFLEX TO FT4^QDITMP||1.26|mIU /L|0.40-4.50|N|||F|||20170502102700|TP

**Person Match failed; the contributor system of QUEST \_UNMATCH was assigned and the message was not split out into separate ORU messages due to the need for manual verification in the UMPQ:**

* The unique Quest accession number was assigned as the patient’s Referring MRN in PID.3.
* The patient CPI sent in PID.2 failed Person Match and was cleared by the oru\_BMGQuest\_in mod object script.
* “Q” was concatenated to the front of the Referring MRN for the patient’s new FIN in PID.18.
* The following warning posted with the ORU message in the ESI\_LOG:
  + ESI\_STAT\_WARNING “The person information in this message could not be matched and unmatched message processing is active. This message will be stored on the unmatched message table.
* The message was sent to the UMPQ (Unmatched Person Queue) for manually verification. After the message was manually matched, it was sent through the ORU\_QUEST\_AMB\_UNMA\_ESI again and was successful.

MSH|^~\&|QUEST\_UNMATCH|TMP||66008690|20170502102932||ORU^R01|80000000000959188722|P|2.3.1 PID|1|^^^BayCareCMRN|TM302904X^^^QU EST\_MRN||TEST^SETH^L||19820201|M||||||||||QTM302904X^^^QUEST^^BAYC\_FL .AMB.QUEST.RLN

NTE|1|TX|FASTING:YES

PV1||A|REF^^^REF^^^REF|||||||||||||||A|||||||||||||||||||||||D|||20170428090500|2017 04282359 ORC|RE|0002589|TM302904X||CM

OBR|1|0002589|TM302904X|10231^COMPREHENSIVE METABOLIC PANEL|||20170428090500||| ||||20170428090500|||||

|||20170502102700|||F||^^^20170428090500

OBX|1|ST|25000000^GLUCOSE^QDITMP^2345-7^Glucose SerPl-mCnc^LN||94|mg/dL|65-99|N|||F|||20170502 102700|TP

NTE|1|RC|

NTE|2|RC| Fasting reference interval

NTE|3|RC|

NTE|4|RC|

NTE|5|RC|Specimen Received d/t : 04/28/2017 09:05:00

NTE|6|RC|

NTE|7|RC|Lab test performed by:

NTE|8|RC|Quest Diagnostics-Tampa

NTE|9|RC|4225 E Fowle r Ave

NTE|10|RC|Tampa, FL 33617-2026

NTE|11|RC|Glen L Hortin

NTE|12|RC|

NTE|13|RC|Quest Comments:

NTE|14|RC|FASTING:YES

OBX|2|ST|25000100^UREA NITROGEN (BUN)^QDITMP^3094-0^BUN SerPl-mCnc^LN||14|mg/dL|7-25|N|||F|

||20170502102700|TP

OBX|3|ST|25000200^CREATININE^QDITMP^2160-0^Creat SerPl-mCnc^LN||0.99|mg/dL |0.60-1.35|N|||F|

||20170502102700|TP

OBX|4|ST|25000210^eGFR NON-AFR. AMERICAN^QDITMP^33914-^GFR/BSA.pred SerPl^LN||98|mL/min/1.73m2|> OR = 60|N|||F|||20170502 102700|TP

OBX|5|ST|25000220^eGFR AFRICAN AMERICAN^QDITMP^48643-^GFR/BSA pred.black^LN||114|mL/min/1.73m2|> OR = 60|N|||F|||20170502102700|TP

OBX|6|ST|25000300^BUN/CREATININE RATIO^QDITMP^3097-3^BUN/Creat SerPl^LN||NOT APPLICABLE|(calc)|6-22||||F|

||20170502102700|TP

OBX|7|ST|25000400^SODIUM^QDITMP^2951-2^Sodium SerPl-sCnc^LN||140|mmol/L|135-146 |N|||F|

||20170502102700|TP

OBX|8|ST|25000500^POTASSIUM^QDITMP^2823-3^Potassium SerPl-sC^LN||4.5|mmol/L|3.5-5.3|N|||F|

||20170502102700|TP

OBX|9|ST|25000600^CHLORIDE^QDITMP^2075-0^Chloride SerPl-sCn^LN||103|mmol/L|98-110|N|||F|

||20170502102700|TP

OBX|10|ST|25000700^CARBON DIOXIDE^QDITMP^2028-9^CO2 SerPl-sCnc^LN||29|mmol/L|20-31|N|||F|

||201705021 02700|TP

OBX|11|ST|25001000^CALCIUM^QDITMP^17861-^Calcium SerPl-mCnc^LN||10.0|mg/dL|8.6-10.3|N|||F|

||20170502102700|TP

OBX|12|ST|25001300^PROTEIN, TOTAL^QDITMP^2885-2^Prot SerPl-mCnc^LN||7 .5|g/dL|6.1-8.1|N|||F|

||20170502102700|TP

OBX|13|ST|25001400^ALBUMIN^QDITMP^1751-7^Albumin SerPl-mCnc^LN||4.7|g/dL|3.6-5.1|N|||F|

||20170502102700|TP

OBX|14|ST|25001500^GLOBULIN^QDITMP^10834-^Globulin Ser Calc-^LN||2.8|g/dL (calc)|1.9-3.7|N|||F|

||20170502102700|TP

OBX|15|ST|25001600^ALBUMIN/GLOBULIN RATIO^QDITMP^1759-0^Albumin/Glob SerPl^LN||1.7|(c alc)|1.0-2.5|

N|||F|||20170502102700|TP

OBX|16|ST|25001700^BILIRUBIN, TOTAL^QDITMP^1975-2^Bilirub SerPl-mCnc^LN||1.2|mg/dL|0.2-1.2|N|||F|

||20170502102700|TP

OBX|17|ST|25002000^ALKALINE PHOSPHATASE^QDITMP^6768-6^ALP SerPl-cCnc^LN||66|U/L|40-115|N|||F|

||20170502102700|TP

OBX|18|ST|25002300^AST^QDITMP^1920-8^AST SerPl-cCnc^LN||16|U/L|10-40|N|| |F|||20170502102700|TP

OBX|19|ST|25002400^ALT^QDITMP^1742-6^ALT SerPl-cCnc^LN||13|U/L|9-46|N|||F|||20170502102700|TP

OBR|2|0002589|TM302904X|496^HEMOGLOBI N A1c||

|20170428090500|||||||20170428090500||||||||20170502102700|||F||^^^20170428090500

OBX|1|ST|50026400^HEMOGLOBIN A1c^QDITMP^4548-4^Hgb A1c MFr Bld^LN| |5.1|% of total Hgb|<5.7|N|||F|||20170502102700|TP

NTE|1|RC|For the purpose of screening for the presence of

NTE|2|RC|diabete s:

NTE|3|RC|

NTE|4|RC|<5.7% Consistent with the absence of diabetes

NTE|5|RC|5.7-6.4% Consistent with increased ris k for diabetes

NTE|6|RC| (prediabetes)

NTE|7|RC|> or =6.5% Consistent with diabetes

NTE|8|RC|

NTE|9|RC|This assa y result is consistent with a decreased risk

NTE|10|RC|of diabetes.

NTE|11|RC|

TE|12|RC|Currently, no consensus exists rega rding use of

NTE|13|RC|hemoglobin A1c for diagnosis of diabetes in children.

NTE|14|RC|

NTE|15|RC|According to American Diab etes Association (ADA)

NTE|16|RC|guidelines, hemoglobin A1c <7.0% represents optimal

NTE|17|RC|control in non-pregnant diabet ic patients. Different

NTE|18|RC|metrics may apply to specific patient populations.

NTE|19|RC|Standards of Medical Care in D iabetes(ADA).

NTE|20|RC|

NTE|21|RC|

NTE|22|RC|Specimen Received d/t: 04/28/2017 09:05:00

NTE|23|RC|

NTE|24|RC| Lab test performed by:

NTE|25|RC|Quest Diagnostics-Tampa

NTE|26|RC|4225 E Fowler Ave

NTE|27|RC|Tampa, FL 33617-2026

NTE|28|RC |Glen L Hortin

NTE|29|RC|

NTE|30|RC|Quest Comments:

NTE|31|RC|FASTING:YES

OBR|3|0002589|TM302904X|36127^TSH W/REFLEX TO FT4|||20170428090500|||||||20170428090500||| |||||20170502102700|||F||^^^20170428090500

OBX|1|ST|55080410^TSH W/REFLEX TO FT4^QDITMP^3016-3^TSH SerPl-aCnc^LN||1.26|mIU/L|0.40-4.50|N|||F|||20170502102700|TP

NTE|1|RC|

NTE|2|RC|Specimen Received d/t: 04/28/2017 09:05:00

NTE| 3|RC|

NTE|4|RC|Lab test performed by:

NTE|5|RC|Quest Diagnostics-Tampa

NTE|6|RC|4225 E Fowler Ave

NTE|7|RC|Tampa, FL 33 617-2026

NTE|8|RC|Glen L Hortin

NTE|9|RC|

NTE|10|RC|Quest Comments:

NTE|11|RC|FASTING:YES

**Sample Message # 4:**

**Inbound Quest Result Message (RAW):**

MSH|^~\&|BMGQUEST|TMP||140044|20170509134752||ORU^R01|80000000000964893871|P|2.3.1

PID|1|903595501^^^BayCareCMRN|TM776160X|3803649L14261|TEST^GARY||19460623|M|||||^^^^^407^7588349|||||9667532^^^^^BAYC\_FL.AMB.QUEST.RLN

NTE|1|TX|FASTING: UNKNOWN

ORC|RE|3803649L14261|TM776160X||CM|||||||1790891182^EVANS^COREY^H^^^^^^^^^NPI

OBR|1|3803649L14261|TM776160X|3020^URINALYSIS, COMPLETE W/REFLEX TO CULTURE^^3020^URINALYSIS, COMPLETE W/REFLEX TO CULTURE|||20170504093400|

||||||20170505052500||1790891182^EVANS^COREY^H^^^^^^^^^NPI|||||TP^Quest Diagnostics-Tampa^4225 E Fowler Ave^Tampa^FL^33617-2026^Glen L Hortin|20170509134500|||F

OBX|1|ST|5778-6^Color Ur^LN^30005500^COLOR^QDITMP||DARK YELLOW||YELLOW|N|||F|||20170509134500|TP

OBX|2|ST|5767-9^Appearance Ur^LN^30005600^APPEARANCE^QDITMP||CLEAR||CLEAR|N|||F|||20170509134500|TP

OBX|3|NM|5811-5^Sp Gr Ur Strip^LN^30006000^SPECIFIC GRAVITY^QDITMP||1.023||1.001-1.035|N|||F|||20170509134500|TP

OBX|4|NM|5803-2^pH Ur Strip^LN^30006200^PH^QDITMP||7.0||5.0-8.0|N|||F|||20170509134500|TP

OBX|5|ST|25428-4^Glucose Ur Ql Strip^LN^30071800^GLUCOSE^QDITMP||NEGATIVE||NEGATIVE|N|||F|||20170509134500|TP

OBX|6|ST|20626-8^Reducing Subs Ur Strip-aCnc^LN^30071900^REDUCING SUBSTANCES^QDITMP||DNR|%|NEGATIVE|N|||X|||20170509134500|TP

OBX|7|ST|5770-3^Bilirub Ur Ql Strip^LN^30005800^BILIRUBIN^QDITMP||NEGATIVE||NEGATIVE|N|||F|||20170509134500|TP

OBX|8|ST|2514-8^Ketones Ur Ql Strip^LN^30005900^KETONES^QDITMP||NEGATIVE||NEGATIVE|N|||F|||20170509134500|TP

OBX|9|ST|5794-3^Hgb Ur Ql Strip^LN^30006100^OCCULT BLOOD^QDITMP||3+||NEGATIVE|A|||F|||20170509134500|TP

OBX|10|ST|20454-5^Prot Ur Ql Strip^LN^30006300^PROTEIN^QDITMP||1+||NEGATIVE|A|||F|||20170509134500|TP

OBX|11|ST|5802-4^Nitrite Ur Ql Strip^LN^30006415^NITRITE^QDITMP||NEGATIVE||NEGATIVE|N|||F|||20170509134500|TP

OBX|12|ST|5799-2^Leukocyte esterase Ur Ql Strip^LN^30006515^LEUKOCYTE ESTERASE^QDITMP||1+||NEGATIVE|A|||F|||20170509134500|TP

OBX|13|ST|5821-4^WBC #/area UrnS HPF^LN^30006700^WBC^QDITMP||20-40|/HPF|< OR = 5|A|||F|||20170509134500|TP

OBX|14|ST|13945-1^RBC #/area UrnS HPF^LN^30006800^RBC^QDITMP||20-40|/HPF|< OR = 2|A|||F|||20170509134500|TP

OBX|15|ST|11277-1^Squamous #/area UrnS HPF^LN^30006900^SQUAMOUS EPITHELIAL CELLS^QDITMP||NONE SEEN|/HPF|< OR = 5|N|||F|||20170509134500|TP

OBX|16|ST|30089-7^Trans Cells #/area UrnS HPF^LN^30006910^TRANSITIONAL EPITHELIAL CELLS^QDITMP||DNR|/HPF|< OR = 5|N|||X|||20170509134500|TP

OBX|17|ST|26052-1^Renal Epi Cells #/area UrnS HPF^LN^30007000^RENAL EPITHELIAL CELLS^QDITMP||DNR|/HPF|< OR = 3|N|||X|||20170509134500|TP

OBX|18|ST|5769-5^Bacteria #/area UrnS HPF^LN^30008900^BACTERIA^QDITMP||FEW|/HPF|NONE SEEN|A|||F|||20170509134500|TP

OBX|19|ST|25148-8^CaOx Cry #/area UrnS HPF^LN^30010000^CALCIUM OXALATE CRYSTALS^QDITMP||DNR|/HPF|NONE OR FEW|N|||X|||20170509134500|TP

OBX|20|ST|46137-6^Tri-Phos Cry #/area UrnS HPF^LN^30010100^TRIPLE PHOSPHATE CRYSTALS^QDITMP||DNR|/HPF|NONE OR FEW|N|||X|||20170509134500|TP

OBX|21|ST|46138-4^Urate Cry #/area UrnS HPF^LN^30010200^URIC ACID CRYSTALS^QDITMP||DNR|/HPF|NONE OR FEW|N|||X|||20170509134500|TP

OBX|22|ST|8246-1^Amorph Sed UrnS Ql Micro^LN^30007300^AMORPHOUS SEDIMENT^QDITMP||DNR|/HPF|NONE OR FEW|N|||X|||20170509134500|TP

OBX|23|ST|38459-4^Crystals #/area UrnS HPF^LN^30009600^CRYSTALS^QDITMP||DNR|/HPF|NONE SEEN|N|||X|||20170509134500|TP

OBX|24|ST|5796-8^Hyaline Casts #/area UrnS LPF^LN^30010400^HYALINE CAST^QDITMP||NONE SEEN|/LPF|NONE SEEN|N|||F|||20170509134500|TP

OBX|25|ST|5793-5^Gran Casts #/area UrnS LPF^LN^30010500^GRANULAR CAST^QDITMP||DNR|/LPF|NONE SEEN|N|||X|||20170509134500|TP

OBX|26|ST|9842-6^Casts #/area UrnS LPF^LN^30011200^CASTS^QDITMP||DNR|/LPF|NONE SEEN|N|||X|||20170509134500|TP

OBX|27|ST|5822-2^Yeast #/area UrnS HPF^LN^30007900^YEAST^QDITMP||DNR|/HPF|NONE SEEN|N|||X|||20170509134500|TP

OBX|28|ST|8251-1^Service Cmnt XXX-Imp^LN^30009300^COMMENTS^QDITMP||DNR|||N|||X|||20170509134500|TP

OBX|29|ST|8251-1^Service Cmnt XXX-Imp^LN^30011300^NOTE^QDITMP||DNR|||N|||X|||20170509134500|TP

OBR|2|3803649L14261|TM776160X|%SBCULI^REFLEXIVE URINE CULTURE^^%SBCULI^REFLEXIVE URINE CULTURE|| |20170504093400||||G|||20170505052500||1790891182^EVANS^COREY^H^^^^^^^^^NPI|||||TP^Quest Diagnostics-Tampa^4225 E Fowler Ave^Tampa^FL^33617-2026^Glen L Hortin|20170509134500|||F|3020

OBX|1|ST|630-4^Bacteria Ur Cult^LN^75030100^REFLEXIVE URINE CULTURE^QDITMP||CULTURE INDICATED - RESULTS TO FOLLOW||||||F|||20170509134500|TP

OBR|3|3803649L14261|TM776160X|395^CULTURE, URINE, ROUTINE^^395^CULTURE, URINE, ROUTINE| ||20170504093400||||G|||20170505052500||1790891182^EVANS^COREY^H^^^^^^^^^NPI|||||TP^Quest Diagnostics-Tampa^4225 E Fowler Ave^Tampa^FL^33617-2026^Glen L Hortin|20170509134500||MI|F|%SBCULI

OBX|1|ST|630-4^Bacteria Ur Cult^LN^75400002^CULTURE, URINE, ROUTINE^QDITMP||SEE NOTE|||A|||F|||20170509134500|TP

NTE|1

NTE|2|| CULTURE, URINE, ROUTINE

NTE|3||

NTE|4|| MICRO NUMBER: 71226980

NTE|5|| TEST STATUS: FINAL

NTE|6|| SPECIMEN SOURCE: URINE

NTE|7|| SPECIMEN QUALITY: ADEQUATE

NTE|8|| RESULT: Greater than 100,000 CFU/mL of Citrobacter koseri

NTE|9

NTE|10|| C.koseri

NTE|11|| ----------------

NTE|12|| INT MIC

NTE|13|| AMOX/CLAVULANATE S 4

NTE|14|| CEFAZOLIN NR <=4 \*\*1

NTE|15|| CEFEPIME S <=1

NTE|16|| CEFTRIAXONE S <=1

NTE|17|| CIPROFLOXACIN S <=0.25

NTE|18|| GENTAMICIN S <=1

NTE|19|| IMIPENEM S <=0.25

NTE|20|| LEVOFLOXACIN S <=0.12

NTE|21|| NITROFURANTOIN I 64

NTE|22|| PIP/TAZOBACTAM S <=4

NTE|23|| TOBRAMYCIN S <=1

NTE|24|| TRIMETHOPRIM/SULFA S <=20

NTE|25

NTE|26||S=Susceptible I=Intermediate R=Resistant \* = Not Tested

NTE|27||NR = Not Reported \*\*NN = See Therapy Comments

NTE|28

NTE|29

NTE|30||THERAPY COMMENTS

NTE|31

NTE|32|| Note 1:

NTE|33|| ORAL therapy: A cefazolin MIC of < 32 predicts

NTE|34|| susceptibility to the oral agents cefaclor,

NTE|35|| cefdinir, cefpodoxime, cefprozil, cefuroxime,

NTE|36|| cephalexin, and loracarbef when used for therapy

NTE|37|| of uncomplicated UTIs due to E. coli,

NTE|38|| K. pneumoniae, and P. mirabilis.

NTE|39|| PARENTERAL therapy: A cefazolin MIC of > 8

NTE|40|| indicates resistance to parenteral cefazolin.

NTE|41|| An alternate test method must be performed to

NTE|42|| to confirm susceptibility to parenteral cefazolin.

**Person match was successful on Cerner for patient’s CPI, DOB, and Sex. The encounter match failed on patient’s FIN causing the creation of a BMG Ref Lab FIN for the patient (i.e., “Q” concatenated in front of the unique Quest accession number) in PID.18. The contributor system of BMGQUEST was assigned and the message was split out into two separate ORU messages. (See *fundamental requirement FR.2016.01.2 and 4.2 Data Transformation Requirements for details.*):**

Message 1:

MSH|^~\&|BMGQUEST|TMP||140044|20170509134752||ORU^R01|80000000000964893871|P|2.3.1

PID|1|903595501^^^BayCareCMRN|TM776160X|3803649L14261|TEST^GARY||19460623|M|||||^^^^^407^7588349|||||QTM776160X^^^QUEST^^BAYC\_FL.AMB.QUEST.RLN

NTE|1|TX|FASTING: UNKNOWN

PV1||A|REF^^^REF^^^REF|||||||||||||||A|||||||||||||||||||||||D|||20170505052500|201705052359

ORC|RE|3803649L14261|TM776160X||CM|||||||1790891182^EVANS^COREY^H^^^^^^^^^NPI

OBR|1|3803649L14261|TM776160X|3020^URINALYSIS, COMPLETE W/REFLEX TO CULTURE||

|20170504093400|||||||20170505052500||1790891182^EVANS^COREY^H||||||20170509134500|||F||^^^20170504093400

OBX|1|ST|30005500^COLOR^QDITMP^5778-6^Color Ur^LN||DARK YELLOW||YELLOW|N|||F|||20170509134500|TP

NTE|1|RC|

NTE|2|RC|Specimen Received d/t: 05/05/2017 05:25:00

NTE|3|RC|

NTE|4|RC|Lab test performed by:

NTE|5|RC|Quest Diagnostics-Tampa

NTE|6|RC|4225 E Fowler Ave

NTE|7|RC|Tampa, FL 33617-2026

NTE|8|RC|Glen L Hortin

NTE|9|RC|

NTE|10|RC|Quest Comments:

NTE|11|RC|FASTING: UNKNOWN

OBX|2|ST|30005600^APPEARANCE^QDITMP^5767-9^Appearance Ur^LN||CLEAR||CLEAR|N|||F|||20170509134500|TP

OBX|3|ST|30006000^SPECIFIC GRAVITY^QDITMP^5811-5^Sp Gr Ur Stri^LN||1.023||1.001-1.035|N|||F|

||20170509134500|TP

OBX|4|ST|30006200^PH^QDITMP^5803-2^pH Ur Strip^LN||7.0||5.0-8.0|N|||F|||20170509134500|TP

OBX|5|ST|30071800^GLUCOSE^QDITMP^25428-^Glucose Ur Ql^LN||NEGATIVE||NEGATIVE|N|||F|||20170509134500|TP

OBX|6|ST|30071900^REDUCING SUBSTANCES^QDITMP^20626-^Reducing Subs^LN||DNR|%|NEGATIVE|N|||X||

|20170509134500|TP

OBX|7|ST|30005800^BILIRUBIN^QDITMP^5770-3^Bilirub Ur Ql^LN||NEGATIVE||NEGATIVE|N|||F|||20170509134500|TP

OBX|8|ST|30005900^KETONES^QDITMP^2514-8^Ketones Ur Ql^LN||NEGATIVE||NEGATIVE|N|||F|||20170509134500|TP

OBX|9|ST|30006100^OCCULT BLOOD^QDITMP^5794-3^Hgb Ur Ql Str^LN||3+||NEGATIVE|A|||F|||20170509134500|TP

OBX|10|ST|30006300^PROTEIN^QDITMP^20454-^Prot Ur Ql St^LN||1+||NEGATIVE|A|||F|||20170509134500|TP

OBX|11|ST|30006415^NITRITE^QDITMP^5802-4^Nitrite Ur Ql^LN||NEGATIVE||NEGATIVE|N|||F|||20170509134500|TP

OBX|12|ST|30006515^LEUKOCYTE ESTERASE^QDITMP^5799-2^Leukocyte est^LN||1+||NEGATIVE|A|||F|

||20170509134500|TP

OBX|13|ST|30006700^WBC^QDITMP^5821-4^WBC #/area Ur^LN||20-40|/HPF|< OR = 5|A|||F|||20170509134500|TP

OBX|14|ST|30006800^RBC^QDITMP^13945-^RBC #/area Ur^LN||20-40|/HPF|< OR = 2|A|||F|||20170509134500|TP

OBX|15|ST|30006900^SQUAMOUS EPITHELIAL CELLS^QDITMP^11277-^Squamous #/ar^LN||NONE SEEN|/HPF|< OR = 5|N||

|F|||20170509134500|TP

OBX|16|ST|30006910^TRANSITIONAL EPITHELIAL CELLS^QDITMP^30089-^Trans Cells #^LN||DNR|/HPF|< OR = 5|N||

|X|||20170509134500|TP

OBX|17|ST|30007000^RENAL EPITHELIAL CELLS^QDITMP^26052-^Renal Epi Cel^LN||DNR|/HPF|< OR = 3|N||

|X|||20170509134500|TP

OBX|18|ST|30008900^BACTERIA^QDITMP^5769-5^Bacteria #/ar^LN||FEW|/HPF|NONE SEEN|A|||F|||20170509134500|TP

OBX|19|ST|30010000^CALCIUM OXALATE CRYSTALS^QDITMP^25148-^CaOx Cry #/ar^LN||DNR|/HPF|NONE OR FEW|N||

|X|||20170509134500|TP

OBX|20|ST|30010100^TRIPLE PHOSPHATE CRYSTALS^QDITMP^46137-^Tri-Phos Cry^LN||DNR|/HPF|NONE OR FEW|N||

|X|||20170509134500|TP

OBX|21|ST|30010200^URIC ACID CRYSTALS^QDITMP^46138-^Urate Cry #/a^LN||DNR|/HPF|NONE OR FEW|N||

|X|||20170509134500|TP

OBX|22|ST|0007300^AMORPHOUS SEDIMENT^QDITMP^8246-1^Amorph Sed Ur^LN||DNR|/HPF|NONE OR FEW|N||

|X|||20170509134500|TP

OBX|23|ST|30009600^CRYSTALS^QDITMP^38459-^Crystals #/ar^LN||DNR|/HPF|NONE SEEN|N|||X|||20170509134500|TP

OBX|24|ST|30010400^HYALINE CAST^QDITMP^5796-8^Hyaline Casts^LN||NONE SEEN|/LPF|NONE SEEN|N||

|F|||20170509134500|TP

OBX|25|ST|30010500^GRANULAR CAST^QDITMP^5793-5^Gran Casts #/^LN||DNR|/LPF|NONE SEEN|N||

|X|||20170509134500|TP

OBX|26|ST|30011200^CASTS^QDITMP^9842-6^Casts #/area^LN||DNR|/LPF|NONE SEEN|N|||X|||20170509134500|TP

OBX|27|ST|30007900^YEAST^QDITMP^5822-2^Yeast #/area^LN||DNR|/HPF|NONE SEEN|N|||X|||20170509134500|TP

OBX|28|ST|30009300^COMMENTS^QDITMP^8251-1^Service Cmnt^LN||DNR|||N|||X|||20170509134500|TP

OBX|29|ST|30011300^NOTE^QDITMP^8251-1^Service Cmnt^LN||DNR|||N|||X|||20170509134500|TP

Message 2:

MSH|^~\&|BMGQUEST|TMP||140044|20170509134752||ORU^R01|80000000000964893871|P|2.3.1

PID|1|903595501^^^BayCareCMRN|TM776160X|3803649L14261|TEST^GARY||19460623|M|||||^^^^^407^7588349|||||QTM776160X^^^QUEST^^BAYC\_FL.AMB.QUEST.RLN

NTE|1|TX|FASTING: UNKNOWN

PV1||A|REF^^^REF^^^REF|||||||||||||||A|||||||||||||||||||||||D|||20170505052500|201705052359

OBR|2|3803649L14261|TM776160X|%SBCULI^REFLEXIVE URINE CULTURE|| |20170504093400||||G|||20170505052500||1790891182^EVANS^COREY^H||||||20170509134500|||F|3020|^^^20170504093400

OBX|1|ST|75030200^REFLEXIVE URINE CULTURE^QDITMP^630-4^Bacteria Ur C^LN||CULTURE INDICATED - RESULTS TO FOLLOW||||||F|||20170509134500|TP

NTE|1|RC|

NTE|2|RC|Specimen Received d/t: 05/05/2017 05:25:00

NTE|3|RC|

NTE|4|RC|Lab test performed by:

NTE|5|RC|Quest Diagnostics-Tampa

NTE|6|RC|4225 E Fowler Ave

NTE|7|RC|Tampa, FL 33617-2026

NTE|8|RC|Glen L Hortin

NTE|9|RC|

NTE|10|RC|Quest Comments:

NTE|11|RC|FASTING: UNKNOWN

Message 3:

MSH|^~\&|BMGQUEST|TMP||140044|20170509134752||ORU^R01|80000000000964893871|P|2.3.1

PID|1|903595501^^^BayCareCMRN|TM776160X|3803649L14261|TEST^GARY||19460623|M|||||^^^^^407^7588349|||||QTM776160X^^^QUEST^^BAYC\_FL.AMB.QUEST.RLN

NTE|1|TX|FASTING: UNKNOWN

PV1||A|REF^^^REF^^^REF|||||||||||||||A|||||||||||||||||||||||D|||20170505052500|201705052359

OBR|3|3803649L14261|TM776160X|395^CULTURE, URINE, ROUTINE||

|20170504093400||||G|||20170505052500||1790891182^EVANS^COREY^H||||||20170509134500||MI|F|%SBCULI|^^^20170504093400

OBX|1|ST|75400002^CULTURE, URINE, ROUTINE^QDITMP^630-4^Bacteria Ur Cult^LN||See Result Comment|||A|||F|||20170509134500|TP

NTE|1|RC

NTE|2|RC| CULTURE, URINE, ROUTINE

NTE|3|RC|

NTE|4|RC| MICRO NUMBER: 71226980

NTE|5|RC| TEST STATUS: FINAL

NTE|6|RC| SPECIMEN SOURCE: URINE

NTE|7|RC| SPECIMEN QUALITY: ADEQUATE

NTE|8|RC| RESULT: Greater than 100,000 CFU/mL of Citrobacter koseri

NTE|9|RC

NTE|10|RC| C.koseri

NTE|11|RC| ----------------

NTE|12|RC| INT MIC

NTE|13|RC| AMOX/CLAVULANATE S 4

NTE|14|RC| CEFAZOLIN NR <=4 \*\*1

NTE|15|RC| CEFEPIME S <=1

NTE|16|RC| CEFTRIAXONE S <=1

NTE|17|RC| CIPROFLOXACIN S <=0.25

NTE|18|RC| GENTAMICIN S <=1

NTE|19|RC| IMIPENEM S <=0.25

NTE|20|RC| LEVOFLOXACIN S <=0.12

NTE|21|RC| NITROFURANTOIN I 64

NTE|22|RC| PIP/TAZOBACTAM S <=4

NTE|23|RC| TOBRAMYCIN S <=1

NTE|24|RC| TRIMETHOPRIM/SULFA S <=20

NTE|25|RC

NTE|26|RC|S=Susceptible I=Intermediate R=Resistant \* = Not Tested

NTE|27|RC|NR = Not Reported \*\*NN = See Therapy Comments

NTE|28|RC

NTE|29|RC

NTE|30|RC|THERAPY COMMENTS

NTE|31|RC

NTE|32|RC| Note 1:

NTE|33|RC| ORAL therapy: A cefazolin MIC of < 32 predicts

NTE|34|RC| susceptibility to the oral agents cefaclor,

NTE|35|RC| cefdinir, cefpodoxime, cefprozil, cefuroxime,

NTE|36|RC| cephalexin, and loracarbef when used for therapy

NTE|37|RC| of uncomplicated UTIs due to E. coli,

NTE|38|RC| K. pneumoniae, and P. mirabilis.

NTE|39|RC| PARENTERAL therapy: A cefazolin MIC of > 8

NTE|40|RC| indicates resistance to parenteral cefazolin.

NTE|41|RC| An alternate test method must be performed to

NTE|42|RC| to confirm susceptibility to parenteral cefazolin.

NTE|43|RC|

NTE|44|RC|Specimen Received d/t: 05/05/2017 05:25:00

NTE|45|RC|

NTE|46|RC|Lab test performed by:

NTE|47|RC|Quest Diagnostics-Tampa

NTE|48|RC|4225 E Fowler Ave

NTE|49|RC|Tampa, FL 33617-2026

NTE|50|RC|Glen L Hortin

NTE|51|RC|

NTE|52|RC|Quest Comments:

NTE|53|RC|FASTING: UNKNOWN

# 5. Alerts

Are you going to need alerting on this connection?

|  |  |
| --- | --- |
| Yes | ☐ |
| No | X |

# Appendix A: Risks and Concerns

|  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | **Project: Quest Ambulatory Results Interface** |  | | |  |  | |  | |  | |
| **Number** | **Risk / Concern** |  | **Mitigation** | | | |  | |  | |  | |
| RC.2016.1.1  RC.2016.8.2  RC.2016.11.3  RC.2019.06.4 | The Cerner RLN Hub does not use FIFO (i.e., first in, first out). Instead, they require Multi-Thread for their interface connections. This raised concerns about partial and preliminary result messages being received after the final result message or a correction message being received prior to the result message needing the correction. This was discussed and the chances of an older result posting over the most recent result on Cerner is very low. Cerner will fail a Partial or Prelim result message received after the final result message because the observation dates/times are earlier than the observation dates/times on the Final results already posted in the Cerner database. The same is true with a correction messages, Cerner will not allow a result with an earlier observation date/time to overwrite a result already posted with a later observation date/time.  There were concerns about splitting original Quest result message into separate messages per OBR segment. Analysis showed the average increase would be 5 new messages for every one original message. Due to this increase, it was decided by the HIM Team responsible for manual patient matching in the UMPQ app to only split the original messages that pass person match of CPI, DOB, and Sex and not the messages that are assigned to the QUEST\_AMB\_UNMATCH contributor system.  There were concerns about assigning the unique Quest accession number as the patient’s referring MRN, however, this was the only unique number available for use when a result message failed person match of CMRN (CPI), DOB, and/or sex. A unique patient identifier was needed or final results that went to the UMPQ after a partial or preliminary result message would never post in Cerner. It was decided by the project team that the referring MRN would only be used when the person match failed and the message was assigned to the QUEST\_AMB\_UNMATCH contributor system. It was also decided to name the alias pool QUEST\_ACCESSION as to not confuse it with real MRN alias pools.  Risk – After Cut Over, there will still be gaps on returning FIN TAGS due to patient flow. This is handled already by creating a LabCorp & Quest FIN when blank. End-users are familiar with the process. |  | | 01/20/16  8/19/16  1  11/9/16  06/17/2019 | |  | |  | |  | |

# Appendix B: Issues List

**Project: Quest Ambulatory Results Interface**

| Issue  # | Issue | Cause/Assigned To | Resolution/Date Resolved | Comments |
| --- | --- | --- | --- | --- |
| 1 | Quest: Some patient results posting to the message Center have only been partial, missing results that appear on Powerchart. Has not been identified as a LabCorp issue. | CloverLeaf coding is removing the ordering physician (OBR;16) from all OBRs in the Quest ORU messages except the first OBR. This causes Only the results that correspond to the first OBR will appear for the physician in the message center.  Assigned To: Art Schwartz | CloverLeaf removed the coding and the ordering physician will post in OBR;16 on all OBR segments in an order (ORM) message.  Date Resolved: 8/4/16 | The coding causing the issue was requested by Quest a year ago. Reason for the coding has been asked- No answer. |
| 2 | Quest ESI Failure Error: Failed to construct Child Clinical Event structure in ESiGenEvent::process | Result Items (Event Codes) have not been aliased for Quest.  Assigned To: Pathnet Team- Jeff Jung, and Linda Lefebvre | Find the result item(s) in the ORU result message that are not aliased on code set 72 and alias with Quest's codes. When aliasing is completed, ask FSI to cycle Cerner servers and Quest to resend.  Date Resolved: This will be an on-going issue. The BayCare Pathnet Team will be monitoring the inbound Quest results for errors. | Originally, CloverLeaf would resend the result messages after the Pathnet Team fixed them (max limit = 10 days); this was a temporary curtesy. Results need to be resent from Quest to ensure the last result message is sent and not an earlier preliminary result message. |
| 3 | Quest ESI Failure Error: Failed when calling finish from EsiGenEvent::process. | New orderable was created and the Gen Lab CCL programs needs to be run to associate the order catalog with the DTAs.  Assigned To: Pathnet Team- Jeff Jung, and Linda Lefebvre | Run the Gen Lab CCL programs as needed depending on the Prod build, cycle servers.  Date Resolved: This will be an on-going issue. The BayCare Pathnet Team will be monitoring the inbound Quest results for errors. |  |
| 4 | Multiple Q encounter rows are being created per patient with the same Q encounter FIN. | Coding change is needed to prevent the same Q encounter row from being created with every result message that is sent on it. There should only be one row per unique Q FIN.  Assigned To: Cerner-Viet Cao/Hope Kaczmarczyk and Sailaja Parimi | Change "encounter ensure type" from "Add ensure" to "Update ensure" for contributor systems, BMGQUEST and QUEST\_UNMATCH, to prevent additional rows from being added when the same Q encounter FIN is used.  Date Resolved: RFC # 11074 in Prod on 3/24/16 |  |
| 5 | Physicians are seeing only partial results on some patients in PowerChart and their Message Center Inboxes. UMPQ Only: When additional result messages are matched on the same Cerner accession number as the first result message that was matched; they fail person match at the Clinical Event (CE) server level and do not post. | UMPQ Only: When additional result messages are matched on the same Cerner accession number as the first result message that was matched; they fail person match at the Clinical Event (CE) server level and do not post. Person identifiers in the additional result messages do not match the ones with the results already posted in the CE table.  Assigned To: Cerner-Viet Cao/Hope Kaczmarczyk and Sailaja Parimi | Use the unique Quest Accession number as the patient's referring MRN only when the message is sent to the QUEST\_UNMATCH contributor System. The Referring MRN will be assigned to the patient when the first result message is sent to the UMPQ. Any additional result messages sent on that same accession number will be assigned to the QUEST\_UNMATCH contributor System and will post automatically without being matched on the UMPQ due to the person match on the referring MRN.  Date Resolved: RFC# 15097 in Prod on 11/9/16 |  |
| 6 | Quest ESI Failure Error: FAILURE!!! -Error calling Clinical Event Server. CRMStatus: 32-OCF error: (Day, Date/Time) ReqFldMissing: loca tion: file: "ee\_ensure\_base.cpp" line: 138 message: ------------------------- Missing a required field: table: "clinical\_eve nt" field: "event\_cd" ------------------------- | ESI server was unable to match or provide a person id to clinical event which is required for event processing.    Assigned To: Cerner-Viet Cao/Hope Kaczmarczyk and Sailaja Parimi | See Issue # 5 for resolution  Date Resolved: RFC# 15097 in Prod on 11/9/16 |  |
| 7 | Quest specimen received date/time needs to be added to the Cerner results displayed on Powerchart and on printed result reports. | The HL7 message is spec'd out to send this information, however, Cerner does not have a place coded in Powerchart for it to appear.  Assigned To: Cerner-Viet Cao | Coding added to the oru\_BMGQuest\_in mod object script to move the "Quest specimen received date/time" to the result (OBX) comments which include patient comment (when applicable), result comment (when applicable) and Test Performed BY/Director comment.  Resolved prior to go-live. |  |
| 8 | Many order results are not posting because of one order in the result messages that has not been aliased. | New order or result item on the Quest side that has not been aliased on the BayCare Cerner side.  Assigned To: Cerner-Viet Cao/Hope Kaczmarczyk and Sailaja Parimi | The mobj\_ambquest\_esi\_in mod object script was written to separate each OBR segment into separate ORU result messages when there is more than one OBR segment in the original message. This process allows for common results to post immediately even though one or more of the OBR segments may have failed due to build/aliasing issues. This functionality was only added for messages that pass the person match on CMRN (CPI), DOB, and sex.  Date resolved: RFC# 13583 in Prod on 8/19/16 |  |
| 9 | Quest result LOINC codes and descriptions are being truncated by the oru\_BMGQuest\_in mod object script in the OBX.3 field.  Issue identified on 4/19/17 by Hope Kaczmarczyk | Cerner’s oru\_BMGQuest\_in mod object script did not take into account that Quest sends LOINC codes in OBX.1-3 and not in OBX.4-6 like LabCorp.  Assigned To: Cerner-Viet Cao/Hope Kaczmarczyk and Sailaja Parimi | Sailaja Parimi verified the issue with Viet and made the changes to the oru\_BMGQuest\_in mod object script in Cerner m30.  Linda Lefebvre assigned to testing with Quest  Date resolved: RFC# 4663 in Prod on 7/25/17 |  |
| 10 | Serval of Quest result messages were received with an OBR in front of every OBX even though they were all for the same first OBR in the Quest result message.  Issue identified on 4/19/17 by Hope Kaczmarczyk | Linda Lefebvre explained that this is an on-going issue with Quest. Quest needs to be notified when a new client number has been added for BayCare so they can “roll-up” all of the OBXs associated to one OBR. If the client number has not been marked as BayCare on Quest, every OBX for a particular OBR will have a separate OBR and create a separate message (e.g., A lipid panel would split into seven separate result messages instead of one because of an OBR being added in front of each OBX.) | Linda Lefebvre to contact Quest with the new Client numbers.  Date Resolved: This will be an on-going issue. | Tim Cain will escalate this issue with Quest to see if they can process our results correctly with the OBX “roll-up” based on BayCare and not on the client number. |
| 11 | When an encounter match fails and a Quest encounter is created, no location is being assigned. | This caused a problem for Pharmacy when medication orders are entered incorrectly on these encounters; the Pharmacy was unable to delete the orders without a location.  Assigned to: Sailaja Parimi | Sailaja Parimi worked with Cindy Barone, Linda Lefebvre, and Quest to create, code, and test the new Ambulatory location of “Ref Lab Result”, alias is REF.  Resolved on 01/10/18: RFC # 8051 |  |
| 12 | Addition of an incorrect address row is occasionally occurring on unmatched patients. | This problem is occurring when an incorrect manual match happens in the Unmatched Queue- When the match is corrected, the wrong patient's address sent from Quest is left as an active row on the other patient.  Also, if Quest has the wrong address for a patient and the result goes to the Unmatched Queue, it will post in Cerner.  Assigned to: Hope Kaczmarczyk | |  | | --- | | Hope Kaczmarczyk made coding changes to the oru\_BMGQuest\_in script clearing the patient’s address/phone fields. Fix was tested in c30 with Linda Lefebvre and Quest.  Resolved on 04/09/18: RFC # 10346 | |  |
| 13 | Mindy found duplicate results posting to Powerchart | The value 1 was being sent in OBX-4 Observation Sub ID. This caused the results to post *twice* in powerchart! Issue is with sending system because this field should be blank! | 3/19/209, sending system stopped sending the value 1 in OBX-4 |  |
| 14 | Messages were not displaying in the Cerner Message Center. | The *new* RLN Encounter Type/Class was not configured in P30 Message Center. It was done in non-prod and tested successfully. | 6/18/2019, The App team added the new RLN Encounter Type, Ref Lab Result Encounter, in the Cerner Message Center. |  |
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