**ORU\_Cerner Lab\_BayCare Community App Requirements**

**Version 1.4**

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**Date: 7/30/2019**

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# **Document Control**

## Resources

|  |  |  |
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## Project Distribution List

## Document Version Control

|  |  |  |  |
| --- | --- | --- | --- |
| **Version** | **Date** | **Modifier** | **Description** |
| V1.0 | 4/17/2017 | Lois Whitley | Originally Created |
| V1.1 | 4/20/17 | Lois Whitley | Updated sample message |
| V1.2 | 3/22/18 | Tiffany Bohall | Updated Functional Requirements filter |
| V1.3 | 1/18/2019 | Tiffany Bohall | Updated Functional Requirements for filtering criteria |
| V1.4 | 07/30/2019 | Yitzhak Magoon & Tiffany Bohall | Updated document for Cerner Model implementation |
|  |  |  |  |

# 1. Introduction

## 1.1 Purpose

The purpose of this document is to define the Results (ORU) interface from Cerner Lab to the BayCare Community Application (also known as Uniphy, Practice Unite, Futura and Physician Mobility).

## 1.2 Project Scope

The scope of this project is to develop an interface between Cerner Lab and the BayCare Community Application. The ORU feed is raw from the cerner\_results site in Cloverleaf, to the healthgrid site for all facilities. From the Healthgrid site, transactions are sent to the Community Application (Uniphy) with minimal filtering. For R03 events, all preliminary and final AP and Micro results are sent.

## 1.3 Terminology Standards

### 1.3.1 Acronyms

ORU – Observation Result

### 1.3.2 Glossary

Uniphy Health – vendor

Practice Unite – software

BayCare Community Application – application name used in Apple Store and Google Play

BayCare Community App – SFB Pilot – full project name in Clarity

## 1.4 Document References

* PD2016IF06\_BAYCARE\_ResultsSpec\_V10 – Results Interface Specification

# 2. Diagram

Provide a solution diagram that depicts the integration of components specified in this IDBB. This diagram must include the data flow for the interfaces (source and target).

# 3. Requirements

## 3.1 Functional Requirements

Provide detail for the below functional requirements. The message transformation requirements for the components defined in this specification should be specified in section 4.2 of this document.

|  |  |  |
| --- | --- | --- |
| **Cloverleaf** |  |  |
| **Number** | **Requirement Name** | **Requirement Description** |
| FR.2018.5.7 | tpsHL7ChangeData2 (on inbound tab of source connection) | Replacing MSH.5 with PV1.3.6. |
| FR.2018.3.22 | tpsAdvHL7Filter | **For the ORU\_R01 route:**   * Suppressing messages where OBR.4 is xxxFormbuilder. * Suppressing results where OBR.24 is Edutainment. * Suppressing lab results where OBR.24 is AP and OBR.25 (result status) is INERROR or X.   **For the ORU\_R03 route:**   * Continue R03 messages where OBR.24 is AP or Micro. * Suppressing lab results where OBR.24 is AP and OBR.25 (result status) is INERROR or X. |
| FR.2019.7.24 | tpsCernerLabResultsModifier | Null PID.5.7    Null various PV1.19 visit number fields:  PV1.19.2  PV1.19.3  PV1.19.4.1  PV1.19.4.2  PV1.19.4.3  PV1.19.5  PV1.19.6.1  PV1.19.6.2  PV1.19.6.3    Swap various ORC.2 and ORC.3 fields:  ORC.2.1 and ORC.3.1  ORC.2.2 and ORC.3.2  ORC.2.3 and ORC.3.3  ORC.2.4 and ORC.3.4    Swap various OBR.2 and OBR.3 fields:  OBR.2.1 and OBR.3.1  OBR.2.2 and OBR.3.2  OBR.2.3 and OBR.3.3  OBR.2.4 and OBR.3.4    If OBX.3.3 =LOINC, swap OBX.3.4 with OBR.3.1 and swap OBX.3.5 with OBX.3.2.  Else, swap OBX.3.4 and OBX.3.1, OBX.3.5 and OBX.3.2 and OBX.3.6 and OBX.3.3. |
| **Cerner** |  |  |
| **Number** | **Requirement Name** | **Requirement Description** |
| FR.2018.01.1 | **ESO Interface Trigger:**  Observation Reporting/ORU Discrete Gen Lab/CE Server GLB/GRP (CQM Class: CE) | This trigger causes the BayCare Laboratory results to be processed outbound when entered in Pathnet as long as the result items are not aliased with DONOTSEND for contributor source INVISION on code set 72.  - The following segments are set to be sent outbound by this trigger:   * HL7 MSH * HL7 PID * HL7 PV1   HL7 OBR/OBX/NTE |
| FR.2018.01.2 | Global Script:  - route\_out | route\_out (global script): Logic to route BayCare Laboratory results to the ORU\_LAB\_RESULTS\_OUT comserver. Logic is based on:   * Message Type = ORU, cqm\_type in “AP”, “MICRO”, or “GRP” * End logic for all ORU messages outbound is sent to these comservers:   - ORU\_LAB\_RESULTS\_OUT |
| FR.2019.07.29.2 | New scripts:  fsi\_common (generic)  oru\_lab\_out (mod object)  fsi\_add\_pcpe (generic) | oru \_lab\_out, Mod Object script, for BayCare Laboratory  results outbound:   * Calls the fsi\_common generic script to load all subroutines * Adds the correct ordering provider to OBR.16, the correct order name/description to OBR.4, and the correct order alias to OBR.3 for AP results. * Replace any primary care physician (PCP) with the PCP at the encounter level in the PD1 segment. * Deletes any DONOTSEND\* result items and renumbers the OBX segments accordingly. \*Note: This is a known Cerner issue where LOINC coding overrides the DONOTSEND functionality. Custom Coding was needed to fix the issue.   Filters all ORU messages if there is no OBX segment after the OBX segments are stripped as described above. |

## 3.2 Non-Functional Requirements

Provide concise detail for the below non-functional requirements. The below requirements must be evaluated for every project.

|  |  |  |
| --- | --- | --- |
| **Cloverleaf** |  |  |
| **Number** | **Requirement Name** | **Requirement Description** |
| NFR.20XX.1.0 | Click here to enter text. | Click here to enter text. |

## 3.3 Messaging Protocols

Below are listed the details for the messaging protocols that will be leveraged for this integration. Please see the reference document located on the Integration SharePoint server: <insert link to document here>

### 3.3.1 Inbound to the BayCare Cloverleaf

* TCP/IP

### 3.3.2 Outbound to the BayCare Cloverleaf –N/A

* Click here to enter text.

### 3.3.3 Inbound to the Vendor–N/A

* Click here to enter text.

### 3.3.4 Outbound to the Vendor

* TCP/IP

### 3.3.5 Inbound to BayCare’s Cerner –N/A

Test

Port Number: Click here to enter text.

IP Address: Click here to enter text.

Prod

Port Number: Click here to enter text.

IP Address: Click here to enter text.

### 3.3.6 Outbound from BayCare’s Cerner

Test

Port Number: 23388

IP Address: cannot access in CL

Prod

Port Number: 23388

IP Address: cannot access in CL

# 4. HL7 Messaging

## 4.1 Messaging Format

### 4.1.1 Segments

The segments utilized for this interface are:

MSH

PID

PV1

OBR

OBX

*Message Construction Notes:*

*MSH – Message Header*

*PID – Patient ID segment*

*PV1 – Patient Visit segment*

*OBR – Observation Request segment*

*OBX – Observation segment*

### 4.1*.2* Messaging Event Types

Below are the messages types necessary for this integration

| **Event Type** | **Description** |
| --- | --- |
| R01 | ORU/ACK - Unsolicited transmission of an observation |
| R03 | Display-oriented results, query/unsolicited update |

### 4.1*.*3 Cloverleaf Configuration Files

Lab Results from Cerner (ORU\_R01 and ORU\_R03).

Raw feed from the cerner\_results\_7\_p site (all facilities).

Raw feed outbound from the hlthgrid\_27\_p site to Uniphy.

Filters: ORU\_R01: None. Prelims and Finals are sent.

ORU\_R03: Select only those that have a diagnostic service (OBR.24) of “AP” or “Micro”

### 4.1.4 Cloverleaf Site Location

hlthgrid\_27\_p

## 4.2 Data Transformation Requirements – N/A – raw feed

| **Field Description** | **HL7 Field Loc.** | **Required Y/N** | **Data Type** | **Length** | **Notes** |
| --- | --- | --- | --- | --- | --- |
| Message Header Segment | MSH |  |  |  |  |
| Sending Application | MSH.3 |  |  |  | CERNER |
| Sending Facility | MSH.4 |  |  |  |  |
| Receiving Application | MSH.5 |  |  |  |  |
| Receiving Facility | MSH.6 |  |  |  |  |
| Date/Time of Message | MSH.7 |  |  |  |  |
| Message Type | MSH.9 |  |  |  | ORU^R01 or ORU^R03 |
| Patient ID | PID |  |  |  |  |
| Patient ID (External) | PID.2 |  |  |  | BayCare Patient ID - MRN |
| Patient ID (Internal) | PID.3 |  |  |  | CMRN |
| Alternate Patient ID | PID.4 |  |  |  | CPI |
| Patient Name | PID.5 |  |  |  | 5.1 – Last Name; 5.2 – First Name |
| Date of Birth | PID.7 |  |  |  | YYYYMMDD |
| Gender | PID.8 |  |  |  |  |
| Race | PID.10 |  |  |  |  |
| Patient Address | PID.11 |  |  |  |  |
| Phone Number – Home | PID.13 |  |  |  |  |
| Primary Language | PID.15 |  |  |  |  |
| Marital Status | PID.16 |  |  |  |  |
| Religion | PID.17 |  |  |  |  |
| Patient Account Number | PID.18 |  |  |  |  |
| Social Security Number | PID.19 |  |  |  |  |
| Ethnic Group | PID.22 |  |  |  |  |
| Birth Order | PID.25 |  |  |  |  |
| Patient Visit | PV1 |  |  |  |  |
| Set ID | PV1.1 |  |  |  |  |
| Patient Class | PV1.2 |  |  |  |  |
| Assigned Patient Location | PV1.3 |  |  |  | Current Assigned Bed Location |
| Admission Type | PV1.4 |  |  |  |  |
| Attending Doctor | PV1.7 |  |  |  | <ID Number>^<Family name>^<Given Name>; repetitions separated by ‘~’ |
| Consulting Doctor | PV1.9 |  |  |  |  |
| Hospital Service | PV1.10 |  |  |  |  |
| Admit Source | PV1.14 |  |  |  |  |
| VIP Indicator | PV1.16 |  |  |  |  |
| Admitting Doctor | PV1.17 |  |  |  |  |
| Patient Type | PV1.18 |  |  |  |  |
| Financial Class | PV1.20 |  |  |  |  |
| Discharge Disposition | PV1.36 |  |  |  |  |
| Servicing Facility | PV1.39 |  |  |  |  |
| Account Status | PV1.41 |  |  |  |  |
| Admit Date/Time | PV1.44 |  |  |  |  |
| Observation Request | OBR |  |  |  |  |
| Set ID | OBR.1 |  |  |  |  |
| Placer Order Number | OBR.3 |  |  |  |  |
| Filler Order Number | OBR.4 |  |  |  |  |
| Observation Date/Time | OBR.7 |  |  |  |  |
| Relevant Clinical Information | OBR.13 |  |  |  |  |
| Specimen Received Date/Time | OBR.14 |  |  |  |  |
| Specimen Source | OBR.15 |  |  |  |  |
| Ordering Provider | OBR.16 |  |  |  |  |
| Filler Field | OBR.20 |  |  |  |  |
| Results Report/Status Change – Date/Time | OBR.22 |  |  |  |  |
| Diagnostic Service Section ID | OBR.24 |  |  |  | ORU^R03: Select only diagnostic service of “AP” or “Micro” |
| Result Status | OBR.25 |  |  |  |  |
| Quantity/Timing | OBR.27 |  |  |  |  |
| Scheduled Date/Time | OBR.36 |  |  |  |  |
| Observation | OBX |  |  |  |  |
| Set ID | OBX.1 |  |  |  |  |
| Value Type | OBX.2 |  |  |  |  |
| Observation Identifier | OBX.3 |  |  |  |  |
| Observation Sub-ID | OBX.4 |  |  |  |  |
| Observation Value | OBX.5 |  |  |  | May repeat for multipart, single answer results |
| Units | OBX.6 |  |  |  |  |
| Abnormal Flags | OBX.8 |  |  |  | IF HH or LL, then include in message |
| Observation Result Status | OBX.11 |  |  |  |  |
| Date/Time of Observation | OBX.14 |  |  |  |  |

## 4.3 Sample Message

MSH|^~\&|HNAM|CERNER|INVISION|SJW|20190725132649||ORU^R03|Q4432210160T5825940259||2.3||||||8859/1

PID|1|2006001998^^^BayCare MRN^MRN|2006001998^^^BayCare MRN^MRN||UCTEST^BABYBOY^^^^^Current||20190614|M||||||||||1006008484^^^BayCare FIN^FIN NBR|||||||0

PV1|1|I|W4E2^4107^01^SJW^^Bed(s)^SJW|||||||||||||||I||||||||||||||||||CD:638671|||SJW||Discharged|||20180601052809|20190621150800

ORC|RE

OBR|1|15247834343^HNAM\_ORDERID||4901024^WoundCAer|||20190725132400|||||||20190725132400|Laceration&Laceration^^^^^Micro|||||000002019206000031^HNA\_ACCN~74113157^HNA\_ACCNID||20190725132620||Micro|P||1^^^20190725132400^^STAT~^^^^^STAT|||||||||20190725132400

OBX|1|FT|L2377403187^Wound Culture Aerobic(Superficial)^^4901024^WoundCAer|| MICROBIOLOGY||||||P|||20190725132612

OBX|2|FT|L2377403187^Wound Culture Aerobic(Superficial)^^4901024^WoundCAer||||||||P|||20190725132612

OBX|3|FT|L2377403187^Wound Culture Aerobic(Superficial)^^4901024^WoundCAer||PROCEDURE: Wound Culture COLLECTED: 7/25/2019 13:24 EDT||||||P|||20190725132612

OBX|4|FT|L2377403187^Wound Culture Aerobic(Superficial)^^4901024^WoundCAer|| Aerobic(Superficial)||||||P|||20190725132612

OBX|5|FT|L2377403187^Wound Culture Aerobic(Superficial)^^4901024^WoundCAer||||||||P|||20190725132612

OBX|6|FT|L2377403187^Wound Culture Aerobic(Superficial)^^4901024^WoundCAer|| [\*1]||||||P|||20190725132612

OBX|7|FT|L2377403187^Wound Culture Aerobic(Superficial)^^4901024^WoundCAer||SOURCE: Laceration SETUP: 7/25/2019 13:25 EDT||||||P|||20190725132612

OBX|8|FT|L2377403187^Wound Culture Aerobic(Superficial)^^4901024^WoundCAer||FREE TEXT SOURCE: ACCESSION: 19-206-00031||||||P|||20190725132612

OBX|9|FT|L2377403187^Wound Culture Aerobic(Superficial)^^4901024^WoundCAer||||||||P|||20190725132612

OBX|10|FT|L2377403187^Wound Culture Aerobic(Superficial)^^4901024^WoundCAer||BODY SITE:||||||P|||20190725132612

OBX|11|FT|L2377403187^Wound Culture Aerobic(Superficial)^^4901024^WoundCAer||||||||P|||20190725132612

OBX|12|FT|L2377403187^Wound Culture Aerobic(Superficial)^^4901024^WoundCAer||GS [] Verified Date/Time: 7/25/2019 13:26 EDT||||||P|||20190725132612

OBX|13|FT|L2377403187^Wound Culture Aerobic(Superficial)^^4901024^WoundCAer||Few White Blood Cells||||||P|||20190725132612

OBX|14|FT|L2377403187^Wound Culture Aerobic(Superficial)^^4901024^WoundCAer||||||||P|||20190725132612

OBX|15|FT|L2377403187^Wound Culture Aerobic(Superficial)^^4901024^WoundCAer||No epithelial cells||||||P|||20190725132612

OBX|16|FT|L2377403187^Wound Culture Aerobic(Superficial)^^4901024^WoundCAer||Moderate Gram Positive Cocci in Pairs and Chains||||||P|||20190725132612

OBX|17|FT|L2377403187^Wound Culture Aerobic(Superficial)^^4901024^WoundCAer||||||||P|||20190725132612

OBX|18|FT|L2377403187^Wound Culture Aerobic(Superficial)^^4901024^WoundCAer||||||||P|||20190725132612

OBX|19|FT|L2377403187^Wound Culture Aerobic(Superficial)^^4901024^WoundCAer|| PROCEDURE SUMMARY||||||P|||20190725132612

OBX|20|FT|L2377403187^Wound Culture Aerobic(Superficial)^^4901024^WoundCAer||||||||P|||20190725132612

OBX|21|FT|L2377403187^Wound Culture Aerobic(Superficial)^^4901024^WoundCAer||Order: Wound Culture Aerobic(Superficial)||||||P|||20190725132612

OBX|22|FT|L2377403187^Wound Culture Aerobic(Superficial)^^4901024^WoundCAer||||||||P|||20190725132612

OBX|23|FT|L2377403187^Wound Culture Aerobic(Superficial)^^4901024^WoundCAer||Order Start Date/Time: 7/25/2019 13:24 EDT||||||P|||20190725132612

OBX|24|FT|L2377403187^Wound Culture Aerobic(Superficial)^^4901024^WoundCAer||Department Status: Stain||||||P|||20190725132612

OBX|25|FT|L2377403187^Wound Culture Aerobic(Superficial)^^4901024^WoundCAer||||||||P|||20190725132612

OBX|26|FT|L2377403187^Wound Culture Aerobic(Superficial)^^4901024^WoundCAer||||||||P|||20190725132612

OBX|27|FT|L2377403187^Wound Culture Aerobic(Superficial)^^4901024^WoundCAer||Performing Locations||||||P|||20190725132612

OBX|28|FT|L2377403187^Wound Culture Aerobic(Superficial)^^4901024^WoundCAer||\*1: This test was performed at:||||||P|||20190725132612

OBX|29|FT|L2377403187^Wound Culture Aerobic(Superficial)^^4901024^WoundCAer|| SJH, 3001 W MLK Jr, Tampa, FL 33607||||||P|||20190725132612

# 

# **5. Testing**

## 5.1. Unit Testing Scenarios

|  |  |
| --- | --- |
| **Scenario** | **Expected Result** |
|  |  |
|  |  |
|  |  |
|  |  |
|  |  |

## 5.2 Integrated Testing Scenarios

|  |  |
| --- | --- |
| **Scenario** | **Expected Result** |
|  |  |
|  |  |
|  |  |
|  |  |
|  |  |
|  |  |

## 5.3 Testing Approvals

|  |  |  |  |
| --- | --- | --- | --- |
| **Testing Phase** | **Date** | **Department** | **Team Member** |
| PH1.UNIT |  |  |  |
| PH1.INTEGRATED |  |  |  |

### 

## 5.4 Piloting

List the facilities and associated networks in scope for pilot testing.

## 5.5 Approvals

|  |  |  |  |
| --- | --- | --- | --- |
| **Testing Phase** | **Date** | **Department** | **Team Member** |
| PH1.0 |  |  |  |
|  |  |  |  |
|  |  |  |  |

# 6. Deployment / Implementation Model

Provide the detail as to how to deploy the solution defined in the IDBB from both the BAYCARE and vendor perspective.

## 6.1 Alerts

Are you going to need alerting on this connection?

|  |  |
| --- | --- |
| Yes |  |
| No |  |

If the answer is yes, please complete the table below:

|  |  |  |  |
| --- | --- | --- | --- |
| **Site Name** | **Hours of Support** | **Distribution Group** | **Comments** |
|  |  |  |  |
|  |  |  |  |

# Appendix A: Risks and Concerns

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Project Name** |  |  | | |  |  |  |  |
| **Number** | **Risk / Concern** | **Comment** | **Mitigation** | | |  |  |  |
| RC.2013.1.0 |  |  | |  | |  |  |  |

# Appendix B: Issues List

This is a dynamic list of the open issues related to the IDBB that remain to be solved, including but not limited to TBDs, pending decisions, information needed, conflict awaiting resolution, and the like.

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Project Name** |  |  | | |  |  |  |  |
| **Number** | **Issue** | **Comment** | **Fix** | | |  |  |  |
| I.2013.1.0 |  |  | |  | |  |  |  |

* End of document