**Allergies and heights/weights from Cerner**

**to GE Centricity Imaging RIS-IC (IDX)**

**Version 1.3**

**Prepared By: Tiffany Bohall**

**Date: 7/29/2019**

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# **Document Control**

## Resources: (include Project Team Members, Liaisons, Vendor Contacts, etc.)

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## Project Distribution List

## Document Version Control

|  |  |  |  |
| --- | --- | --- | --- |
| **Version** | **Date** | **Modifier** | **Description** |
| V1.0 | 12/11/2017 | Tiffany Bohall | Originally Created |
| V1.2 | 11/06/2018 | Charles Markwardt | Remove reference to the Historical CMRN from the PID segment. |
| V1.2 | 07/25/2019 | Tiffany Bohall | Updated requirements to include ht/wt changes from the Cerner Model project for Cloverleaf |
| V1.3 | 07/29/2019 | Yitzhak Magoon | Updated requirements to include ht/wt changes from Cerner Model project from FSI |
|  |  |  |  |

# 1. Introduction

## 1.1 Purpose

The purpose of this document is to provide the HL7 ADT interface requirements currently in place in Cloverleaf, between Cerner and GE Centricity Imaging RIS-IC (IDX) with regard to allergies, heights and weights. The intended audience will encompass anyone who wishes to understand more about this specific integration.

## 1.2 Project Scope –N/A

Describe the scope of the integration that is defined in this Integration Development Build Book (IDBB), particularly if this IDBB defines only part of the system or a single subsystem.

## 1.3 Terminology Standards

### 1.3.1 Acronyms

IDX – GE Centricity Imaging RIS-IC (BayCare’s Radiology application)

### 1.3.2 Glossary –N/A

List the terms that require definition with respect to Cloverleaf and the product whose requirements are defined in this document. The definitions are specific to this document and may not be identical to the definitions of these terms in common use.

## 1.4 Document References –N/A

List all documents or Web addresses to which this IDBB refers; provide enough information so that the reader can access a copy of each reference. Include the title, author, version number, date, and source or location.

# 2. Diagram –N/A

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.2017.12.11 | Active allergies | There is a filter on the interface route that suppresses all ADT events where PV1.45 (discharge date) is populated. |
| FR.2017.12.11.2 | Allergy segment | There is a post proc filter on the interface route that suppresses all ADT events with an empty AL1.0 field. |
| FR.2019.7.8.1 | Convert ORM messages from Cerner to ORU\_R01 messages going to downstream applications | The Cerner Model project converted height and weight transactions outbound from Cerner, from ORU to ORM transactions. In order to avoid complete rebuild of variants/routes and translates, Cloverleaf added a tpsHL7ChangeData2 proc that converts MSH.8. |
| FR.2019.7.8.2 | tpsCernerHeightWeightUnits | The Cerner Model project required that Cloverleaf add units of measure to height and weight transactions: add ‘cm’ to OBX.6, when OBX.3 = HIEGHT and add ‘kg’ to OBX.6 when OBX.3 = WEIGHT |
| FR.2019.7.8.3 | tpsCernerCommonCode | The Cerner Model project required common coded elements on multiple interfaces: copy PV1.3.7 to MSH.5.1, remove email address from PID.11, only send Home address in PID.11, null SSN if all 999’s, replace & characters with the word ‘and’ in OBR.13, OBR.27 and OBR.31. |

|  |  |  |
| --- | --- | --- |
| **Cerner** |  |  |
| **Number** | **Requirement Name** | **Requirement Description** |
| FR.2019.7.8.4 | Discern Rule | The Cerner Model project required that PowerChart team update their Discern Rules BCC\_DISCERN\_HT\_WT and BCC\_DISCERN\_BIRTH\_HT\_WT. The logic was changed to properly send out the height and weight in an OBX segment as well as add encounter type filtering at the rule level. Encounter type filtering was removed from the global suppression script. |
| FR.2019.7.8.5 | Order Entry Flexing | The Cerner Model Project required that the PowerChart team remove flexing from the Order Entry Format for the two height and weight orders that get triggered from the rule. |
| FR.2019.7.8.6 | ORM\_HT\_WT\_OUT | The Cerner Model Project required a new dedicated height and weight interface to be created. This is a standard TCP/IP interface with no modobj or modorig scripts. |

## 3.2 Non-Functional Requirements

Provide concise detail for the below non-functional requirements. This would include external table ownership, hours of support, etc. The below requirements must be evaluated for every project.

|  |  |  |
| --- | --- | --- |
| **Cloverleaf** |  |  |
| **Number** | **Requirement Name** | **Requirement Description** |
| NFR.2017.12.11 | Location suppression for allergies | There is a filter on the interface route which suppresses all ADT events where MSH.4 = ISU SIP CRC WBH BHO BHOBC BHOBT WBHWB WBHWM WBHWS BHOBB BHOBN BHOBP BHOBS BHOBT BHOBV BHOBY BLMLC BLMLM BLMLT BLM BHOBD BHOBE BHOBF BHOBG BHOBH BHOBJ BHOBK BHOBL BHOBM MDC. |
| NFR.2017.12.11.0 | Location suppression for heights and weights | ISU SIP CRC BHOBC BHOBT WBHWB WBHWM WBHWS BHOBB BHOBN BHOBP BHOBS BHOBT BHOBV BHOBY BLMLC BLMLM BLMLT BLM BHOBD BHOBE BHOBF BHOBG BHOBH BHOBJ BHOBK BHOBL BHOBM MDCDC MDCDM MDCDN |

|  |  |  |
| --- | --- | --- |
| **Cerner** |  |  |
| **Number** | **Requirement Name** | **Requirement Description** |
| NFR.2019.7.8.1 | Encounter type suppression for height and weight | Height and weight is not sent out BMG / BUC patients with one of the following encounter types:  AMBULATORYMATERNITYOFFICE  AMBULATORYOFFICE  WORKERSCOMP  URGENTCARE  URGENTCAREOCCMED |

## 3.3 Messaging Protocols

Below are listed the details for the messaging protocols that will be leveraged for this integration. This includes: TCP/IP, FTP, Web Services, etc.

### 3.3.1 Inbound to the BayCare Cloverleaf

|  |  |
| --- | --- |
| FTP |  |
| MLLP Socket Connection (TCP/IP) |  |
| Local File Drop by Midrange Team |  |
| Other | Click here to enter text. |

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

|  |  |
| --- | --- |
| FTP |  |
| MLLP Socket Connection (TCP/IP) |  |
| Local File Drop by Midrange Team |  |
| Other | Click here to enter text. |

### 3.3.3 Inbound to the Vendor –N/A

|  |  |
| --- | --- |
| FTP |  |
| MLLP Socket Connection (TCP/IP) |  |
| Local File Drop by Midrange Team |  |
| Other | Click here to enter text. |

### 3.3.4 Outbound to the Vendor

|  |  |
| --- | --- |
| FTP |  |
| MLLP Socket Connection (TCP/IP) |  |
| Local File Drop by Midrange Team |  |
| Other | Click here to enter text. |

# 4. HL7 Messaging

## 4.1 Messaging Format

**Allergies:**

**Inbound:** HL7 2.3 cerner\_emr\_ADT\_A31 and **outbound:** HL7 2.3 cerner\_emr\_ADT\_A08

**Heights and weights:**

**Inbound:** HL7 2.3 sms\_ORU\_R01 and **outbound:** HL7 2.3 cerner\_emr\_ADT\_A08

### 4.1.1 Segments

The segments utilized for the allergy interface are:

MSH

EVN

PID

PV1

AL1

The segments utilized for the heights and weights interface are:

MSH

EVN

PID

PV1

[{OBX}]

*Message Construction Notes:*

*[Square Brackets] – Optional*

*{Curly Brackets} – Repeatable*

*MSH – Message Header*

*EVN – Event segment*

*PID – Patient ID segment*

*PV1 – Patient Visit segment*

*ORC – Common Order segment*

*IN1 – Insurance segment*

*[{ – Start of optional, repeatable group*

*}] – End of optional, repeatable group*

### 4.1*.*2 Messaging Event Types

Below are the messages types necessary for this integration

|  |  |
| --- | --- |
| **Event Type** | **Description** |
| A08 | Update patient information |
| A31 | Update person information |
| ORU\_R01 | Results |

### 4.1*.*3 Cloverleaf Configuration Files

For each HL7 interface specified in Section 2 of this document, identify the Cloverleaf Configuration Files: Variant is version 2.3 and the translation file for allergies is cerner\_idxrad\_a31\_al1\_emr\_soar.xlt and heights and weights is cerner)idxrad\_hw\_oru.xlt

### 4.1.4 Cloverleaf Site Location

Cloverleaf site locations for this interface is on the imaging\_12\_p for test and production.

## 4.2 Data Transformation Requirements

| **Field Description** | **HL7 Field Loc.** | **Required Y/N** | **Notes** |
| --- | --- | --- | --- |
| Message Header Segment (MSH) | All | Y | Path copy entire segment |
| Sending Facility | MSH.4 | Y | Copy from output of MSH.5, post table crosswalk |
| Receiving Facility | MSH.5 | Y | Send contents of MSH.5 through a table (cerner\_idx\_soarf\_facility.tbl) and populate the contents with table output. |
| Message Type | MSH.9.0  MSH.9.1 | Y | Hard code ADT in 9.0 and A08 in 9.1 |
| Event Type Code | EVN.1 | Y | Hard code A08 |
| Date/Time of Event | EVN.2 | Y | Copy from MSH.7 |
| Patient ID (external) | PID.2 | Y | Iterate on PID.3.3 and if it equals BayCare CMRN or BayCare EAD CPI, copy associated numerical contents outbound.  There is a pre-proc TCL string length that forces the numeric number to be 9 in length. |
| Patient ID (internal) | PID.3  PID.3.5 | Y | If the output of PID.2.0 is null, null PID.3. So if there is no CPI, then remove the MRN as well.  Copy the output of MSH.5.0 outbound |
| Patient Name: last, first, middle | PID.5.0  PID.5.1  PID.5.2 | Y | Copy |
| Date/time of birth | PID.7 | Y | Copy |
| Sex | PID.8 | Y | Hard code U |
| Patient Account Number | PID.18.0 | Y | Copy |
| SSN | PID.19 | Y | Copy and there is a pre-proc TCL string length that forces the numeric number to be 9 in length. |
| Visit number | PV1.19 | Y | Copy |
| **LOGIC SPECIFIC FOR ALLERGIES ONLY** | | | |
| Set ID | AL1.1 | Y | Iterate over AL1 segment. If ZAL.6 = Active, and AL1.3.1 does not equal NKA, copy outbound |
| Allergy Code/Mnemonic/Description | AL1.3 | Y | Hard code HISALLERGY |
| Action code | ZAL.1 | Y | Copy |
| Reaction Status | ZAL.6 | Y | Copy |
| **LOGIC SPECIFIC FOR HEIGHTS AND WEIGHTS ONLY** | | | |
| Set ID | OBX.1 | Y | Iterate over OBX segment. If OBX.3.0 = Height, copy |
| Value Type | OBX.2 | Y | Copy |
| Observation Identifier | OBX.3 | Y | Hard code HEIGHT |
| Observation Value | OBX.5 | Y | Copy |
| Units | OBX.6 | Y | Copy |
| Set ID | OBX.1 | Y | If OBX.3.0 = Weight, copy |
| Value Type | OBX.2 | Y | Copy |
| Observation Identifier | OBX.3 | Y | Hard code WEIGHT |
| Observation Value | OBX.5 | Y | Copy |
| Units | OBX.6 | Y | Copy |

## 4.3 Sample Message

**ALLERGIES**

*INBOUND FROM CERNER:*

MSH|^~\&|HNAM|CERNER|SJH|SOARIAN|20171211135139||ADT^A31|Q3714925394T4753463500||2.3||||||8859/1

EVN|A31|20171211135139|||1645092

PID|1|7000015424^^^BayCare MRN^MRN^SOARIAN|7000015424^^^BayCare MRN^MRN^SOARIAN~810014378^^^BayCare CMRN^Community Medical Record Number^SOARIAN|810014378^^^BayCare EAD CPI^Historical CMRN^SOARIAN|MERMAID^ARIEL^^^^^Current||19860101|F||White|3001 W MLK JR BLVD^^Tampa^FL^33607^^Home||(813)554-8915^Home1||EN|S|Catholic|6000033407^^^BayCare FIN^FIN NBR^SOARIAN||||Non HIS or LAT|||0

PV1|1|I|7E^B703^A^SJH^^Bed(s)^SJH|Elective|||1992772230^Beattie^Martin^C^^^^^NPI Number^Personnel^^^National Provider Identifier^CACTUS~MS006716^Beattie^Martin^C^^^^^BayCare Dr Number^Personnel^^^ORGANIZATION DOCTOR^CACTUS|||MED||||RP||N|1992772230^Beattie^Martin^C^^^^^NPI Number^Personnel^^^National Provider Identifier^CACTUS~MS006716^Beattie^Martin^C^^^^^BayCare Dr Number^Personnel^^^ORGANIZATION DOCTOR^CACTUS|I||Undetermined|||||||||||||||||||SJH||Active|||20170720091800

AL1|1|FA|ANKA^No known allergies^Allergy

ZAL|ADD||41388775|41388775|Allergy|Active|||||20171211135138|^Martin^Shelly^A^^^^^^Personnel|0

AL1|2|FA|APNT^Peanuts^Allergy

ZAL|SNAPSHOT|20171211135127|41388769|41388765|Allergy|Active|^No known allergies^639026||||20171211135127|^Martin^Shelly^A^^^^^^Personnel|0

AL1|3|FA|ASTR^Strawberries^Allergy

ZAL|SNAPSHOT|20171211135044|41388759|41388755|Allergy|Active|^Peanuts^639026||||20171211135044|^Martin^Shelly^A^^^^^^Personnel|0

*OUTBOUND TO GE CENTRICITY IMAGING:*

MSH|^~\&|HNAM|BCSJH|BCSJH|SOARIAN|20171211135139||ADT^A08|Q3714925394T47534635|P|2.3|9|||||8859/1

EVN|A08|20171211135139

PID||810014378|7000015424^^^^^BCSJH||MERMAID^ARIEL||19860101|F||||||||||6000033407

AL1|1||HISALLERGY^No known allergies

ZAL|ADD|||||Active

AL1|2||HISALLERGY^Peanuts

ZAL|SNAPSHOT|||||Active

AL1|3||HISALLERGY^Strawberries

ZAL|SNAPSHOT|||||Active

**HEIGHTS AND WEIGHTS**

*INBOUND FROM CERNER:*

MSH|^~\&|HNAM|CERNER|INVISION|BAYCARE|20190722072825||ORM^O01|Q4432205984T5825934705||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||||^TEST^3SURGANES1^^^^^^^Personnel|||||||||||I||||||||||||||||||CD:638671|||SJW||Discharged|||20180601052809|20190621150800

PV2|||^TEST|||||||0||||||||||||CONFID|^^589750

ORC|NW|15241069869^HNAM\_ORDERID|||65||||20190722072825|^SYSTEM^Donotchange^^^^^^^Personnel||^SYSTEM^Donotchange^^^^^^^Personnel|||20190722072825|||Discern Expert^Discern Expert|^SYSTEM^Donotchange^^^^^^^Personnel

OBR|1|15241069869^HNAM\_ORDERID||DEHTWT^Discern HT WT||||||||||||^SYSTEM^Donotchange^^^^^^^Personnel||||||20190722072825||Discern Rule Order|||1^^0^20190722072825

NTE|1|ORDCOM| Discern Order entered secondary to height and/or weight being entered on a patient in MedManager, PowerForm, or Direct Flow Sheet Charting.

OBX|1|ST|HEIGHT^DE Height||55.88

OBX|2|ST|WEIGHT^DE Weight||4.2

*OUTBOUND TO GE CENTRICITY IMAGING:*

MSH|^~\&|HNAM|BCSJWH|BCSJWH|BAYCARE|20190722072825||ADT^A08|Q4432205984T5825934705|P|2.3|9|||||8859/1

EVN|A08|20190722072825

PID|||2006001998^^^^^BCSJWH||UCTEST^BABYBOY||20190614|M||||||||||1006008484

OBX|1|ST|^HEIGHT||55.88|cm

OBX|2|ST|^WEIGHT||4.2|kg

# 5. 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** |
|  |  |  |  |
| Imaging\_12\_p | 24/7/365 | Diagnostic Clinical Applications | If the outbound queue depth exceeds 100 messages for more than 10 minutes, trigger an alert. Repeat up to 2 times every 60 minutes. |

# Appendix A: Risks and Concerns –N/A

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

# Appendix B: Issues List –N/A

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