**ADT from Cerner (Ht/Wt) to Computrition Requirments**

**Version 1.2**

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**Date: 7/29/2019**

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# **Document Control**

## Resources

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## Project Distribution List

## Document Version Control

|  |  |  |  |
| --- | --- | --- | --- |
| **Version** | **Date** | **Modifier** | **Description** |
| V1.0 | 6/7/2017 | Levy Lazarre | Originally Created |
| V1.1 | 9/1/2018 | Tiffany Bohall | Updated for new ht/wt solution |
| V1.2 | 07/29/2019 | Yitzhak Magoon | Updated requirements to include ht/wt changes from Cerner Model project from FSI |
|  |  |  |  |

# 1. Introduction

## 1.1 Purpose

The goal of this document is to outline the interface requirements for the ADT interface from Cerner Millennium to Computrition for the purpose of transmission of patient height/weight information from Cerner to Computrition.

An HL7 result message (ORU^R01) is triggered in Cerner when height and/or weight information is entered on a patient in MedManager, PowerForm, or Direct Flow Sheet Charting. **This ORU message is transformed to an ADT^A08 message by the Cloverleaf interface engine, so it appears that Computrition is simply receiving a regular A08 update message, with the height/weight information being contained in OBX segments.**

## 1.2 Project Scope

The scope of this project is to migrate all BayCare hospitals using other diet systems (VST Carex, CBORD…) to Computrition and upgrade all hospitals already using Computriton to the Enterprise version of the software.

Integration for this application includes an ADT interface from Soarian Financials for patient demographics, an ADT interface from Cerner Millennium for allergies, a diet orders interface from Cerner Millennium, and a result interface from Cerner Millennium for patient height / weight information.

This document describes the ORU interface from Cerner to Computrition, which includes data for BayCare inpatients and outpatients.

## 1.3 Terminology Standards

### 1.3.1 Acronyms

ADT - Admission, Discharge and Transfer

HIS – Hospital Information System

ORU – Observation Result, Unsolicited

### 1.3.2 Glossary

**Hospitality Suite** is the name of the application suite used by BayCare

**Room Service** is the name of an add-on to Hospitality Suite used by BayCare

## 1.4 Document References

1. HL7-Interface-Specifications-ADT-v-2010.pdf
2. Interface Schema Document.docx

# 2. Diagram – N/A

# 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.2019.6.24.1 | 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.2019.6.24.2 | 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 = WIEGHT |
| FR.2019.6.24.3 | 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. |
| FR.2017.1.0 | Convert ORU message from Cerner to ADT message for Computrition | All ORU^R01 messages from Cerner to Computrition are changed to ADT^A08. The event code is changed in MSH.9 and EVN.1 |
| FR.2017.2.0 | Pad the MRN out of Cerner to match Invision to other systems | Cerner sends the BayCare MRN in PID.2. This MRN must be padded with a certain number of leading zeros, depending on the facility code. |

|  |  |  |
| --- | --- | --- |
| FR.2017.3.0 | For SJW MRN conversion to 7 digits, strip leading 0 on 6-digit MRNs | If the facility code in MSH.5 is SJW and there is a leading zero in a six-digit MRN, the leading zero must be suppressed. |

|  |  |  |
| --- | --- | --- |
| FR.2017.4.0 | Only send height/weight OBX segments to Computrition. | A message may contain a mixture of OBX segments. Only those containing “HEIGHT” or “WEIGHT” in OBX.3 are allowed to pass in the interface. |

|  |  |  |
| --- | --- | --- |
| FR.2017.5.0 | Prevent newborns information from going across to Computrition | These patients are not relevant to Computrition. A TCL Advanced Filter is used to filter out all messages with the patterns \*Birth\*Weight\* or \*Birth\*Height\*. |
| FR.2017.6.0 | Reformat OBX.3 according to vendor specifications. | Per vendor request, OBX.3 must look as follows:  **1010.3^HEIGHT^AS4** or **1010.1^WEIGHT^AS4** |

|  |  |  |
| --- | --- | --- |
| FR.2017.7.0 | Add Date/Time to OBX.14 | Computrition requires a date/time for the height/weight observation. The Date/Time of Message (MSH.7) is copied to OBX.14 (Date/Time of the Observation). |

|  |  |  |
| --- | --- | --- |
| **Cerner** |  |  |
| **Number** | **Requirement Name** | **Requirement Description** |
| FR.2019.7.8.1 | 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.2019.7.8.2 | 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.2019.7.8.3 | 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

None related to interfacing.

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

### 3.3.1 Inbound to the BayCare Cloverleaf

* No inbound since this is a one-way outbound interface from Cloverleaf to Computrition

### 3.3.2 Outbound to the BayCare Cloverleaf

### 3.3.3 Inbound to the Vendor

### 3.3.4 Outbound to the Vendor

* Protocol: TCP/IP MLLP
* TEST IP 10.44.184.237
* PROD IP 10.44.184.231

Both interface servers are running Linux OS, RedHat Enterprise Linux (RHEL) version 7.

The port numbers for the different connections are listed in the document named “Interface Schema Document.docx”.

### 

### 3.3.5 Inbound to the BayCare Cerner – N/A

### 3.3.6 Outbound to the BayCare Cerner

# 4. HL7 Messaging

## 4.1 Messaging Format

### 4.1.1 Segments

The segments utilized for this 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*

*OBX – Observation 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** |
| ORU^R01 | Observation Result, Unsolicited |
| ADT^A08 | Update Patient Information |

### 4.1*.*3 Cloverleaf Configuration Files

The following Cloverleaf configuration files were used:

Xlate: cerner\_comp\_hw\_oru\_emr\_p2.xlt

Variants: HL7 2.3 sms and HL7 2.2 comp\_emr

TCL filters: tpsAdvHL7Filter.tcl

### 4.1.4 Cloverleaf Site Location

Cloverleaf site locations for the Computrition interfaces:

TEST: dietary\_8

PROD: dietary\_8\_p

## 4.2 Data Transformation Requirements

| **Field Description** | **HL7 Field Loc.** | **Required Y/N** | | **Data Type** | **Length** | **Notes** |
| --- | --- | --- | --- | --- | --- | --- |
| Message Header Segment | MSH | Y | Misc | | Varies | PathCopy the entire segment |
| Encoding Characters | MSH.2 | Y | ST | | 4 | Copy “^~\&” |
| Sending Application | MSH.3 | N | HD | | 180 | Copy “HNAM” |
| Sending Facility | MSH.4 | N | HD | | 180 | Copy “Cerner” |
| Receiving Application | MSH.5 | N | HD | | 180 | Copy |
| Receiving Facility | MSH.6 | Y | HD | | 180 | Copy MSH.5 |
| Message Type | MSH.9 | Y | CM | | 7 | Copy “ADT” to MSH.9, first component  Copy “A08” to MSH.9, second component |
| Version ID | MSH.12 | Y | HD | | 60 | Copy “2.2” |
| Event Type Code | EVN.1 | Y | ID | | 3 | Copy “A08” |
| Date/Time of Event | EVN.2 | Y | TS | | 26 | Copy MSH.7 |
| Set ID - PID | PID.1 | N | SI | | 4 | Copy |
| Patient ID – Internal ID (BayCare MRN) | PID.3 | Y | CX | | 20 | Copy PID.2 (Pad with leading zeros as indicated in functional requirements) |
| Patient Name | PID.5 | Y | XPN | | 48 | Copy the entire field |
| Date of Birth | PID.7 | N | DTM | | 8 | Copy the entire field |
| Gender | PID.8 | N | IS | | 1 | Copy the entire field |
| Patient Account Number | PID.18 | N | CX | | 20 | Copy PID.18, first subfield |
| Set ID – PV1 | PV1.1 | N | SI | | 4 | Copy |
| Patient Class | PV1.2 | N | ID | | 1 | Copy |
| Admission Type | PV1.4 | N | IS | | 2 | Copy |
| Patient Type | PV1.18 | N | ID | | 3 | Copy |
| Visit Number | PV1.19 | N | HD | | 180 | Copy |
| Admit Date/Time | PV1.44 | N | TS | | 12 | Copy the entire field |
| Discharge Date/Time | PV1.45 | N | TS | | 12 | Copy the entire field. |
| OBX Segments for Height and Weight | {OBX} | Y | Misc | | Varies | ITERATE  Pass only OBX segments that report height or weight information (OBX.3 = HEIGHT or OBX.3 = WEIGHT) |
| Set ID - OBX | OBX.1 | Y | SI | | 10 | Copy |
| Value Type | OBX.2 | Y | ID | | 2 | Copy “**ST**” |
| Observation Identifier, ID | OBX.3, first component | Y | ID | | Varies | Copy “**1010.3**” if input OBX.3 = “HEIGHT”  Copy “**1010.1**” if input OBX.3 = “WEIGHT” |
| Observation Identifier, Text | OBX.3, second component | Y | ST | | Varies | Copy “**HEIGHT**” if input OBX.3 = “HEIGHT”  Copy “**WEIGHT**” if input OBX.3 = “WEIGHT” |
| Observation Identifier, Name Of Coding System | OBX.3, third component | Y | ST | | Varies | Copy “**AS4**” |
| Observation Value | OBX.5 | Y | ST | | 65536 | Copy |
| Units | OBX.6 | Y | CE | | 60 | Copy |
| Date/Time of the Observation | OBX.14 | Y | TS | | 26 | Copy MSH.7 |

## 

## 4.3 Sample Messages

Sample ADT messages to Computrition (inpatient, outpatient):

**FROM CERNER:**

MSH|^~\&|HNAM|CERNER|INVISION|BAYCARE|20190705132631||ORM^O01|Q4432187769T5825908986||2.3||||||8859/1

PID|1|7000111562^^^BayCare MRN^MRN^SOARIAN|7000111562^^^BayCare MRN^MRN^SOARIAN~810123577^^^BayCare CMRN^Community Medical Record Number^SOARIAN||DOSEMETHREE^LOWENOX^^^^^Current||19840115|M||W|8975 ALEXANDER ST^^Plant City^FL^33566^USA^Home||(813)597-8878^PRN||ENG|S|BAP|6000144822^^^BayCare FIN^FIN NBR^SOARIAN||||NOH|||0

PV1|1|I|5N^D502^A^SJH^^Bed(s)^SJH|U|||ME29156^Toonkel^Leonard^M^^^^^Doctor License Number^Personnel^^^LICENSENBR^CACTUS~AT8769284^Toonkel^Leonard^M^^^^^DEA No^Personnel^^^DOCDEA^CACTUS~MS062881^Toonkel^Leonard^M^^^^^Username^Personnel^^^Username^CACTUS~1356315147^Toonkel^Leonard^M^^^^^NPI Number^Personnel^^^National Provider Identifier^CACTUS~MS062881^Toonkel^Leonard^M^^^^^BayCare Dr Number^Personnel^^^ORGANIZATION DOCTOR^CACTUS|||MED||||RP|||ME29156^Toonkel^Leonard^M^^^^^Doctor License Number^Personnel^^^LICENSENBR^CACTUS~AT8769284^Toonkel^Leonard^M^^^^^DEA No^Personnel^^^DOCDEA^CACTUS~MS062881^Toonkel^Leonard^M^^^^^Username^Personnel^^^Username^CACTUS~1356315147^Toonkel^Leonard^M^^^^^NPI Number^Personnel^^^National Provider Identifier^CACTUS~MS062881^Toonkel^Leonard^M^^^^^BayCare Dr Number^Personnel^^^ORGANIZATION DOCTOR^CACTUS|I||H|||||||||||||||||||SJH||Active|||20190705083700

PV2||Acute|^TEST|||||||0||||||||||||CONFID|^^589748

IN1|1|26137150^UHC CHC CHC PLUS ATLANTA^^^UHC CHC CHC PLUS ATLANTA|1050111|United Healthcare|PO BOX 740800^CPG 8007^ATLANTA^GA^30374^UNITED STATES^business||(877)842-3210^WPN||UHC Chc Chc Plus Atlanta|||20190705000000|||O|DOSEMETHREE^LOWENOX^^^^^Current|1|19840115|8975 ALEXANDER ST^^Plant City^FL^33566^USA^Home|||1|||||||||||||H||||||||M||||||U897452159

IN2|0||||||||||||||||||||||||U897452159||||||||||||||||||||||||||||||||||||U897452159||(813)597-8878^PRN

ORC|NW|15205017369^HNAM\_ORDERID|||65||||20190705132631|^SYSTEM^Donotchange^^^^^^^Personnel||^SYSTEM^Donotchange^^^^^^^Personnel|||20190705132631|||Discern Expert^Discern Expert|^SYSTEM^Donotchange^^^^^^^Personnel

OBR|1|15205017369^HNAM\_ORDERID||DEHTWT^Discern HT WT||||||||||||^SYSTEM^Donotchange^^^^^^^Personnel||||||20190705132631||Discern Rule Order|||1^^0^20190705132631

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||175

OBX|2|ST|WEIGHT^DE Weight||75

**TO COMPUTRITION:**

MSH|^~\&|HNAM|CERNER|SJH|SJH|20190705132631||ADT^A08|Q4432187769T58259089|P|2.2

EVN|A08|20190705132631

PID|1||7000111562||DOSEMETHREE^LOWENOX||19840115|M||||||||||6000144822

PV1|1|I||U||||||||||||||I||||||||||||||||||||||||||20190705083700

OBX|1|ST|1010.3^HEIGHT^AS4||175|cm||||||||20190705132631

OBX|2|ST|1010.1^WEIGHT^AS4||75|kg||||||||20190705132631

# **5. Testing**

## 5.1. Unit Testing Scenarios

Perform various height/weight add/modify information in Cerner and verify that the information is correctly reflected in the application.

|  |  |
| --- | --- |
| **Scenario** | **Expected Result** |
| Admit a patient in Soarian Financials | Patient is found in Computrition with the proper demographics |
| Enter height/weight information on that patient in Cerner Millennium | All height/weight information is seen in Computrition |

## 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

Go-live dates for the Computrition Application (with Cutover the night before):

MPH, MCS, MDU, BAH: May 3, 2017

NBY: May 14. 2017

## 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