**ORU from Cerner (Flowsheet) to eICU**

**1.1**

**Prepared By: Lois Whitley & Tom Fredrickson**

**Date: 12/21/2016**

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# **Document Control**

## Resources

|  |  |  |
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## Project Distribution List

## Document Version Control

|  |  |  |  |
| --- | --- | --- | --- |
| **Version** | **Date** | **Modifier** | **Description** |
| V1.0 | 12/2/2016 | Lois Whitley | Originally Created |
| V1.1 | 12/21/2016 | Tom Fredrickson | Updated Cloverleaf Technical Information |
|  |  |  |  |
|  |  |  |  |

# 1. Introduction

## 1.1 Purpose

The purpose of this document is to outline the Cerner Flowsheets (ORU) interface requirements for the Philips eCareManager application (also known as Virtual ICU and eICU) from Cerner.

## 1.2 Project Scope

The eICU program includes the Philips eCareManager application which gathers demographic, lab result, pharmacy order, charting, and vital sign information for all inpatients, ED, and outpatients in a bed.

Integration for the eCareManager (eICU) application includes an ADT interface from Soarian, ADT interface from Cerner for Heights and Weights, Orders from the Cerner PharmNet (Pharmacy) system, results from Cerner PathNet (Lab), and CCL flowsheet results from Cerner.

The flowsheet interface includes all data documented in the eCareManager Vital Signs and Infusions Flowsheet and the Intake and Output screen. This interface is forwarded raw from Cerner to eICU.

## 1.3 Terminology Standards

### 1.3.1 Acronyms

ACK – General acknowledgement message

ADT – Admission, Discharge and Transfer Message

CCL – Cerner Command Language

eICU – electronic intensive care unit; critical care telehealth program

ORU – Observation result/unsolicited

### 1.3.2 Glossary

eCareManager – Enterprise Telehealth Software suite

Philips – vendor name

## 1.4 Document References

ECAREMANAGER Flowsheet Outbound Interface Vendor Specs

eICU Integration Roadmap

# 2. Diagram

eCareManager IPC Interface patient Cache

Cloverleaf

oru\_eicu\_out\_flow

Cerner Flowsheet ORU

oru\_cer\_in\_flow

eCareManager

Database

TCP/IP

TCP/IP

Orion Rhapsody Interface Gateway for eCareManager

# 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.2016.1.0 | This is a pass through interface. | The Flow sheet messages are  Raw feeds for both Cerner FSI and Coverleaf. |
|  |  |  |
| FR.2016.2.0 | Facility filter | There is a facility filter for limiting messages to just those facilities that have implemented eICU beds. This includes the following:  MSH-5.1 = one of the following: MCS MDU MPH NBY SAH SFB SJN SJS BAH SJH BRM WHH. |
|  |  |  |
| FR.2016.3.0 | Filter unwanted transactions from eICU | Transactions >=4 days post-discharge.  Outpatients not in a bed.  Pediatric patients.  Allow only OBR-24 = "FS" Diagnostic Service Section ID. |

## 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 from Cerner to Cloverleaf

* Site: eicu\_9\_p Thread: oru\_cer\_in\_flow

### 3.3.2 Outbound to eICU

* Site: eicu\_9\_p Thread: oru\_eicu\_out\_flow

### 

### 3.3.3 Inbound from Cerner to Cloverleaf

Test

IP Address: 10.5.250.203

Port Number: 22006 Cert, 22064 Mock

Prod

IP Address: 10.5.250.201

Port Number: 22083

### 3.3.4 Outbound to eICU

Test

IP Address: 10.44.110.109

Port Number: 10004

Prod

IP Address: 10.44.110.77

Port Number: 10004

# 4. HL7 Messaging

## 4.1 Messaging Format

### 4.1.1 Segments

The segments utilized for this interface are:

MSH

PID

OBR

OBX

NTE

*Message Construction Notes:*

*[Square Brackets] – Optional*

*{Curly Brackets} – Repeatable*

*MSH – Message Header*

*PID – Patient ID segment*

*OBR – Observation Request segment*

*OBX – Observation/Result segment*

*NTE – Notes and Comments 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** |
| R01 | Unsolicited transmission of an observation |

### 4.1*.*3 Cloverleaf Configuration Files

tpsAdvHL7Filter.tcl

tpsFilterEICU.tcl

### 4.1.4 Cloverleaf Site Location

eicu\_9\_p

## 4.2 Data Transformation Requirements

| **Field Description** | **HL7 Field Loc.** | **Required Y/N** | **Data Type** | **Length** | **Notes** |
| --- | --- | --- | --- | --- | --- |
| Message Header | MSH |  |  |  |  |
| Sending Facility | MSH.4 |  |  |  |  |
| Date/Time of Message | MSH.7 |  |  |  | YYYYMMDDHHMMSS |
| Message Type | MSH.9 |  |  |  | ORU^R01 |
| Message Control ID | MSH.10 |  |  |  | Unique identifier for the message |
| Patient Identification | PID |  |  |  |  |
| Patient ID (Internal ID) | PID.3 |  |  |  | Unique for instance of care (FIN#?) |
| Patient Name | PID.5 |  |  |  | FamilyName^GivenName |
| Date of Birth | PCI.7 |  |  |  | YYYYMMDD |
| Observation Request | OBR |  |  |  |  |
| Observation Date/Time | OBR.7 |  |  |  | Event Date/Time |
| Diagnostic Service Section | OBR.24 |  |  |  |  |
| Observation/Result | OBX |  |  |  |  |
| Set ID | OBX.1 |  |  |  |  |
| Value Type | OBX.2 |  |  |  | ST=string |
| Observation Identifier Text | OBX.3 |  |  |  | Identifier^Text^Name of Coding System  Identifier = Unique identifier of the field  Text=description of the field  Name of Coding System = BCHS\_FS |
| Observation Sub-ID | OBX.4 |  |  |  | Hard-coded text that defines a high-level category of data:  VS-Flowsheet  Infusion Drug Rate  Infusion Pump Rate  Continuous Infusion  Intake (colloid, crystalloid, blood product, nutrition)  Dialysis  Output |
| Observation value | OBX.5 |  |  |  | Value of the field |
| Units | OBX.6 |  |  |  | Conditionally sent; not all fields have associated units |
| Observation Result Status | OBX.11 |  |  |  | Only supported values:  C=Correction  F=Final  D=Delete |
| Date/Time of Observation | OBX.14 |  |  |  | Reflects Entry Date/Time – when the user actually saved the value or change |
| Responsible Observer | OBX.16 |  |  |  | ID and name of user who signed/pinned the data; repeating segment  ID^FamilyName^GivenName |
| Notes and Comments | NTE |  |  |  | Only present for Corrections and Deletions |
| Comment | NTE.3 |  |  |  | If any individual OBS segment contains a value with a Result Status of “C” corrected or “D” deleted, this segment may follow with the CHANGE REASON |

## 4.3 Sample Message

Flowsheets

MSH|^~\&||WHH|||20161104085614||ORU^R01|1014333135475162383|P|2.3

PID|||6000023630^^^&BCHS^FIN^&WHH||ECMINTEGRATED^FIVEWHH^||19720823

OBR|||||||20161104085500|||||||||||||||||FS

OBX|0|ST|112147771^naloxone^BCHS\_FS|CONTINUOUS INFUSION|0.500000|mg/hr|||||F|||20161104085540||Morrison , Heather|

OBX|1|ST|112151594^propofol^BCHS\_FS|CONTINUOUS INFUSION|1.000000|mcg/kg/min|||||F|||20161104085609||Morrison , Heather|

# **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