**BayCare Health System & Florida SHOTS**

**Immunization Results Real Time Interface**

**Version 1.6**

**Prepared By: Tony McArtor & Dan Olszewski**

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[Document Control 3](#_Toc500335785)

[Resources 3](#_Toc500335786)

[Project Distribution List 3](#_Toc500335787)

[Document Version Control 3](#_Toc500335788)

[1. Introduction 4](#_Toc500335789)

[1.1 Purpose 4](#_Toc500335790)

[1.2 Project Scope 4](#_Toc500335791)

[1.3 Terminology Standards 4](#_Toc500335792)

[1.3.1 Acronyms 4](#_Toc500335793)

[1.3.2 Glossary 4](#_Toc500335794)

[1.4 Document References 4](#_Toc500335795)

[2. Dataflow Diagram 5](#_Toc500335796)

[3. Requirements 6](#_Toc500335797)

[3.1 Functional Requirements 6](#_Toc500335798)

[3.1.2 Functional Requirements (Cerner FSI) 6](#_Toc500335800)

[3.2 Non-Functional Requirements 7](#_Toc500335801)

[3.3 Messaging Protocols 7](#_Toc500335802)

[3.3.1 Cerner Outbound to Cerner HUB 7](#_Toc500335803)

[4. HL7 Messaging 8](#_Toc500335807)

[4.1 Messaging Format 8](#_Toc500335808)

[4.1.1 Segments 8](#_Toc500335809)

[4.1*.*2 Messaging Event Types 8](#_Toc500335810)

[4.2 Data Transformation Requirements 8](#_Toc500335811)

[4.3 Sample Message 10](#_Toc500335812)

[5. Testing 10](#_Toc500335813)

[5.1. Unit Testing Scenarios 10](#_Toc500335814)

[5.2 Integrated Testing Scenarios 11](#_Toc500335815)

[5.3 Testing Approvals 11](#_Toc500335816)

[5.4 Piloting 11](#_Toc500335817)

[5.5 Approvals 11](#_Toc500335818)

[6. Deployment / Implementation Model 11](#_Toc500335819)

[Appendix A: Risks and Concerns 12](#_Toc500335820)

[Appendix B: Passing HL7 Files 12](#_Toc500335821)

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# **Document Control**

## Resources

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|  |  |  |

## Project Distribution List

## Document Version Control

|  |  |  |  |
| --- | --- | --- | --- |
| **Version** | **Date** | **Modifier** | **Description** |
| V1.0 | 12/17/2014 | Tony McArtor | Originally Created |
| V1.1 | 01/16/2015 | Tony McArtor | Update Deployment Section |
| V1.2 | 05/15/2015 | Tony McArtor | Update Deployment Section & Diagram |
| V1.3 | 05/03/2017 | Dan Olszewski | Functional Reqs Update |
| V1.4 | 05/31/2018 | Dan Olszewski | Updating Req to reflect real time interface |
| V1.5 | 11/06/2018 | Charles Markwardt |  |
| V1.6 | 8/7/19 | Sailaja Parimi | Updated info on non-prod domain |

# 

# 1. Introduction

## 1.1 Purpose

This document outlines BayCare’s SHOTS outbound vaccination interface. All functional requirements needed to support this solution post implementation will be detailed.

## 1.2 Project Scope

The Florida SHOTS Private Provider Upload process allows enrolled Florida SHOTS practitioners to securely transmit immunization event data to the Department of Health for addition to the Florida SHOTS registry.

The VXU interface cannot be run in more than one non-prod domain. Cerner recommendation is not to send these messages to State in a non-prod domain, but we can write to oen\_txlog table and configure the interface with IP when we are ready to test.

## 1.3 Terminology Standards

### 1.3.1 Acronyms

MLLP – Minimum Lower Layer Protocol for messaging framing a HL7 message.

### 1.3.2 Glossary

## 1.4 Document References

**Cerner Specifications:**

Cerner 2.5 Unit+21o+-++Imm.pdf

CDC hl7guide-1-4-2012-08.pdf

**SHOTS Specifications:**

Florida Specs HL7\_FLSHOTS.pdf

Florida ValidValues\_FLSHOTS.pdf

FLSHOTS\_2.5.1-Specs-Book-online1.pdf

# 2. Dataflow Diagram

Data flow:

Baycare’s Cerner Environment > Cerner HUB > FL Shots   
  
An acknowledgment gets recorded in OEN\_TXLOG for each transaction that gets sent.

# 3. Requirements

## 3.1 Functional Requirements

### 3.1.1 Functional Requirements (Cerner)

|  |  |  |
| --- | --- | --- |
| **Cerner** |  |  |
| **Number** | **Requirement Name** | **Requirement Description** |
| FR.2014.1.0 | MSH 4 Logic toggling between Client ID’s | Cerner defaults HKT55060 in MSH 4 when location is not mapped with FL Shots(common user error issue, error log in DA2 identifies locations that aren’t accounted for ) |
| FR.2014.2.0 | Filter if RXA 5.1 is blank | Cerner sends VXU messages when a none BayCare vaccination is charted. The State doesn’t want these historical vaccinations. |
| FR.2014.1.0 | Default MSH segment | Default MSH segment to SHOTS Specifications (Appendix 1) |
| FR.2014.2.0 | Default PID segment | Default PID segment to SHOTS Specifications (Appendix 1) |
| FR.2014.3.0 | Filter PID 11 | E-mail filter stopping e-mail in the PID 11 address fields (Appendix 1) |
| FR.2014.4.0 | Filter NK1 | Filters NK1 segment to SHOTS Specifications (Appendix 1) |
| FR.2014.5.0 | Filter PD1 | Filters PD1 segment to SHOTS Specifications (Appendix 1) |
| FR.2014.6.0 | Default RXA segment | Default RXA segment to SHOTS Specifications (Appendix 1) |
| FR.2017.1.0 | Do not send Refused immunization statuses out of Cerner | IF RXA.20 is equal to “RE”(Refused) ignore the message in Cerner. |
| FR.2014.7.0  FR.2014.8.0 | Filter OBX  Cerner Interface Code Sets & corresponding contributor system | Filters OBX to SHOTS Specifications (Appendix 1)  CS 57 (HL7 v2), CS 282 (CDC),CS 212 (HL7 v2), CS 43 (HL7 v2), CS 221 (Manufactures of Vaccines) 97 (HL7 v2), 4001 (HL7 v2) 4002875 (Invision) |
|  |  |  |
| FR.2018.11.0 | Remove the Historical MRN | No longer will be sending out the Historical MRN in the PID 3 field. Now we will be only sending the CMRN |

## 3.2 Non-Functional Requirements

|  |  |  |
| --- | --- | --- |
| **System** |  |  |
| **Number** | **Requirement Name** | **Requirement Description** |
| NFR.2014.2.0  NFR.2014.3.0 | Portal Error Checking  Code Set Responsibility | BayCare has the responsibility to check error logs within the SHOTS registry and DA2 report.  FSI (HK7 v2) PharmNet (Clinical CS) |

## 3.3 Messaging Protocols

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

### 3.3.1 Cerner Bi-directional to/from Cerner Hub

* ComServer: VXU\_TCP\_HUB\_OUT

PRODUCTION

* TCP IP
* Port: 13937 (P30)
* IP Address: 159.140.230.203 (P30) Production

NON-PROD

* Disk (change to TCP/IP only when needed)
* Port: 13933 (C30 or M30)
* IP Address: 159.140.230.202 (C30 or M30)
* Never set two non-prod domains with TCP/IP, which would cause problems on State side.

# 4. HL7 Messaging

## 4.1 Messaging Format

For each HL7 interface specified in Section 2 of this document, identify the message type, segments and events included in the interface. Also provide links to the HL7 specifications in the external document reference.

### 4.1.1 Segments

The segments utilized for this interfaces are:

MSH

PID

PV1 (filtered)

PD1 (filtered)

NK1 (filtered)

ORC

RXA

RXR

OBX

### 4.1*.*2 Messaging Event Types

Below are the messages types necessary for this integration

|  |  |
| --- | --- |
| **Event Type** | **Description** |
| XU^V04 | Unsolicited Vaccination Record |

## 4.2 Data Transformation Requirements

| **Field Description** | **HL7 Field Loc.** | **Required Y/N** | **Notes** |
| --- | --- | --- | --- |
| Sending Application | MSH3.1 | Y | Set to “BAYC\_FL” |
| Sending Facility | MSH.4 | Y | Set MSH4 based on the facility alias. If MSH4 doesn’t match one of the FL Shots account default to BayCare Health System |
| Receiving Application | MSH.5 | Y | Set to blank |
| Receiving Facility | MSH.6 | Y | Set to blank |
| Patient assign auth OID Filtering | PID3.4 | Y | Set to blank |
| Patient ID type code | PID3.5 | Y | Set to “MR” if field is set to “BayCare CMRN” |
| Patient ID type code | PID3.5 | Y | Remove any MRN numbers that don’t have MR as the type. |
| Patient assign\_fac\_id OID Filtering | PID3.7 | Y | Set to blank |
| Mother’s maiden name | PID.6 | Y | Set to blank |
| Patient address | PID.11 | Y | Only send home address |
| Ph\_nbr\_home | PID.13 | Y | Only send “PRN” phone number |
| Language, Martial Status, Religion, Ethnic Group | PID.15 PID.16 PID.17 PID.22 | Y | Set to blank |
| Patient\_primary\_facility, Prim\_care\_prov | PD1:3 PD1:4 | Y | Set to blank |
| Order Filler Nbr | ORC3 | Y | ORC3= Cerner filler order id |
| Order Control Group | ORC | Y | The rest of the ORC sgements are set to blank |
| Give\_sub\_id\_counter | RXA:1 | Y | If field is blank, ignore message |
| Admin\_end\_dt\_tm | RXA:4 | Y | If field is blank set RXA4=RXA3 |
| Administered Code | RXA:5 | Y | If field is “DONOTSEND” ignore message |
| Administered\_amount | RXA:6 | Y | If field = “999” ignore message |
| Administered\_units->original\_text | RXA:7 | Y | Set to blank |
| Administration\_notes ->identifier | RXA:9 | Y | If field is blank set to “01”;  "Historical information - source unspecified" |
| Administration\_provider | RXA:10 | Y | Only send NPI identifier, otherwise don’t send identifier |
| Administered\_at\_location | RXA:11.4 | Y | Only send Facility alias, blank the rest of RXA 11 |
| Completion\_stat | RXA:20 | Y | If field is not “CP” then ignore message |
| Action\_code\_rxa | RXA:21 | Y | If field is “ND”, “ERR”, “UNAUTH” ignore message |
| Next of Kin | NK1 | Y | Remove segment |
| Person visit info | PV1 | Y | Remove segment |
| Insurance | IN1 | Y | Remove segment |
| Timing Qty Group | TIMING\_QTY\_GROUP | Y | Remove segment |

MSH 4 logic:

;MSH:4

set oen\_reply->CONTROL\_GROUP [1]->MSH [1]->sending\_facility->univ\_id\_type = ""

if (oen\_reply->CONTROL\_GROUP [1]->MSH [1]->sending\_facility->name\_id = "HKT55060")

set oen\_reply->CONTROL\_GROUP [1]->MSH [1]->sending\_facility->univ\_id = "BayCare Health System"

endif

if (oen\_reply->CONTROL\_GROUP [1]->MSH [1]->sending\_facility->name\_id = "CLX43486")

set oen\_reply->CONTROL\_GROUP [1]->MSH [1]->sending\_facility->univ\_id = "SunCoast Medical Clinic"

endif

if (oen\_reply->CONTROL\_GROUP [1]->MSH [1]->sending\_facility->name\_id = "KYG38940")

set oen\_reply->CONTROL\_GROUP [1]->MSH [1]->sending\_facility->univ\_id = "Baycare Medical Group"

endif

if (oen\_reply->CONTROL\_GROUP [1]->MSH [1]->sending\_facility->name\_id = "MHW38320")

set oen\_reply->CONTROL\_GROUP [1]->MSH [1]->sending\_facility->univ\_id = "Baycare Urgent Care"

endif

if (oen\_reply->CONTROL\_GROUP [1]->MSH [1]->sending\_facility->name\_id = "SJCO01")

set oen\_reply->CONTROL\_GROUP [1]->MSH [1]->sending\_facility->univ\_id = "SJCC Mobile Clinic"

endif

;default location if FL Shots account is not in message; catching user error

IF (oen\_reply->CONTROL\_GROUP [1]->MSH [1]->sending\_facility->name\_id not in ("SJCO01",

"MHW38320", "KYG38940", "CLX43486", "HKT55060"))

Set oen\_reply->CONTROL\_GROUP [1]->MSH [1]->sending\_facility->name\_id = "HKT55060"

Set oen\_reply->CONTROL\_GROUP [1]->MSH [1]->sending\_facility->univ\_id = "BayCare Health System"

ENDIF

## 4.3 Sample Message

**Cerner**

**Standard Outbound:**

MSH|^~\&|BAYC\_FL|HKT55060^BayCare Health System|||20181105145547||VXU^V04^VXU\_V04|Q4425558388T5813525376|T|2.5.1|||ER|AL||8859/1|||Z22^CDCPHINVS|St. Joseph's Hospital^^^^^CERNER&2.16.840.1.113883.3.1106.600&ISO

# PID|1||810070511^^^^MR||EVENTTHREEB^EIGHT^^^^^Current||20170212|F||2054-5^Black^HL70005^2054-5^Black^CDCREC^^^Black|876 W OAK ST^^Tampa^FL^33664^^H||||eng^English^ISO639|S^Single^HL70002||6000090662^^^^FIN NBR^SOARIAN||||2135-2^Hispanic or Latino^CDCREC

# PD1|||||||||||01^No reminder/recall^HL70215

# ORC|RE||{40EB927E-7CBD-414E-9FD7-DC8C371E28B0}^CERNER||||||||||||||CERNER^St. Joseph's Hospital^HL70362

# RXA|0|1|20181105145400|20181105145400|03^MMR^CVX|0.5|mL^Milliliter^UCUM^mL^Milliliter^BCLAB||00^New immunization record^NIP001|^TEST^3OFCNURSE1^^^^^^^Personnel|^^^SJH||||12345|20190210|AB^ABBOTT PHARMACEUTICAL^MVX|||CP|A|20181105145545

# RXR|C38299^Subcut^NCIT|LA^Arm, L upper^HL70163

# OBX|1|CE|64994-7^Vaccine funding program eligibility category^LN|1|V06^Unique State Program^HL70064||||||F|||20181105145545|||VXC40^Eligibility captured at the Immunization level^CDCPHINVS

# OBX|2|CE|30956-7^Vaccine Type^LN|1|03^Measles, Mumps, Rubella^CVX||||||F|||20181105145545

# OBX|3|TS|29768-9^Date vaccine information sheet published^LN|1|20180212||||||F|||20181105145545

# OBX|4|TS|29769-7^Date Vaccine Information sheet Presented^LN|1|20181105||||||F|||20181105145545

# **5. Testing**

## 5.1. Unit Testing Scenarios

|  |  |
| --- | --- |
| **Scenario** | **Expected Result** |
| Clinical teams process vaccination records within PowerChart | These records were evaluated by State (passing) file attached below |
|  |  |
|  |  |

## 5.2 Integrated Testing Scenarios

|  |  |
| --- | --- |
| **Scenario** | **Expected Result** |
| Clinical teams process vaccination records within PowerChart | These records were evaluated by State (passing) file attached below |
| Additional post implementation review will be scheduled with State |  |
|  |  |

## 5.3 Testing Approvals

|  |  |  |  |
| --- | --- | --- | --- |
| **Testing Phase** | **Date** | **Department** | **Team Member** |
| PH1.UNIT | 12/10/2014 | IS Clinical | Abbie Marshall / Charles De La Torre |
| PH1.INTEGRATED | 12/18/2014 | IS Clinical | Abbie Marshall / Charles De La Torre |

## 5.4 Piloting

05/24/18 The Real Time interface was implemented in production.

## 5.5 Approvals

|  |  |  |  |
| --- | --- | --- | --- |
| **Testing Phase** | **Date** | **Department** | **Team Member** |
| PH1.0 | 12/18/2014 | IS Apps | Cheri Krampert |
|  |  |  |  |

# 6. Deployment / Implementation Model

This interface has been deployed for multiple years regarding the hospital (HKT55060) vaccination messages. However, as of May 15 BayCare has activated the Suncoast’s (CLX43486), MPM (KYG38940) and BayCare Urgent Care (MHW38320) offices on this interface.

# Appendix A: Risks and Concerns

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  |  |  | | |  |  |  |  |
| **Number** | **Risk / Concern** | **Comment** | **Mitigation** | | |  |  |  |
|  |  |  | |  | |  |  |  |
|  |  |  | |  | |  |  |  |

# Appendix B: Passing HL7 Files

Attached files in notepad (double click on the blue)



* End of document