PARTNERS HEALTHCARE

FOUNDED BY BRIGHAM AND WOMEN'S HOSPITAL
AND MASSACHUSETTS GENERAL HOSPITAL

Site Biomed Hands-on Training

OBIX Introduction

MGH

July 10th, 2018

Agenda

- OBIX Overview
- High level integration concepts
- High Level Architecture Diagrams
- OBIX Interface Diagram
- Bedside Workstation

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OBIX Overview

- OBIX is Partners' Electronic Fetal Monitoring Device integration solution
- OBIX collects fetal traces and displays them at the bedside and central stations
- OBIX can display the vitals data that has been validated in Epic as Notes
- OBIX can function independently of Epic during an Epic downtime

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Integration Concepts - HL7

HL7 is the data format in which messages are transferred clinically. Whether it's through ADT messages or with results messages

- Vital signs (variables) results messages FROM medical device TO Epic
- Admit Discharge Transfer (ADT) and NOTES flow FROM Epic TO OBIX

HL7 fields are used to identify data as well as map that specific data into EPIC. These fields include:

- MSH header/timestamps
- OBR timestamp
- OBR-10
- OBX-3.1

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Integration Concepts – HL7

MSH Header
- Defines which connectivity is being used
- MSH timestamp determines when the message was compiled

OBR Timestamp
- When the vital signs were taken
- Epic files the message according to this timestamp

OBR-10
- Device ID of medical device-SRH_6_610

OBX lines
- Each line is information for a specific variable
- Includes MDC code, variable ID, value
- Used in variable mapping

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Integration Concepts – HL7

OBIX

5006027941, DocType = **MDEV:ORU_R01**',MessageTypeCategory = ''
Description = '***Unsolicited transmission of an observation message - Unsolicited transmission of an observation mes***

1MSH | ^~\& | OBIX | OBIX | | . | 20171019091342-0400 | | ORU ^ R01 ^ ORU_R01 | 33623 | P | 2.6 | . | . | AL | NE | . | . | . | . | . | .
2PID | . | . | 614441 ^ . ^ . ^ . ^ CDH ~ 10126313112 ^ . ^ . ^ . ^ EPIC | . | XXXXCDHBMDITEST ^ FOUR ^ . | . | 19900404 | . | . | . | . | . | . | . | . | . | . | 6064153858
3PV1 | . | . CDH_CDCBC ^ LD02 ^ 02 A . ^ CDH ^ . ^ . ^ . ^ . ^ . ^ . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | 3173117492 | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | 20171019091338
4OBR | . | . | . | . | . | . | 20171019091342
5OBX | 1 | NM | 150456 ^ MDC_PULS_OXIM_SAT_O2 ^ MDC | 1 | .1.6 | 100 | 2 2688 ^ MDC_DIM_PERCENT ^ MDC | . | . | . | . | R | . | . | 20171019091338-0400 | . | . | . | . | . | . | .

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Integration Concepts

OBIX

- MOXA terminal port determines the Device ID
- Device ID is PV1.3 field
  - CDH_CDCBC-01 A
- PV1.3 field maps to DEV record
  - EFM CBC LDR1 CDH

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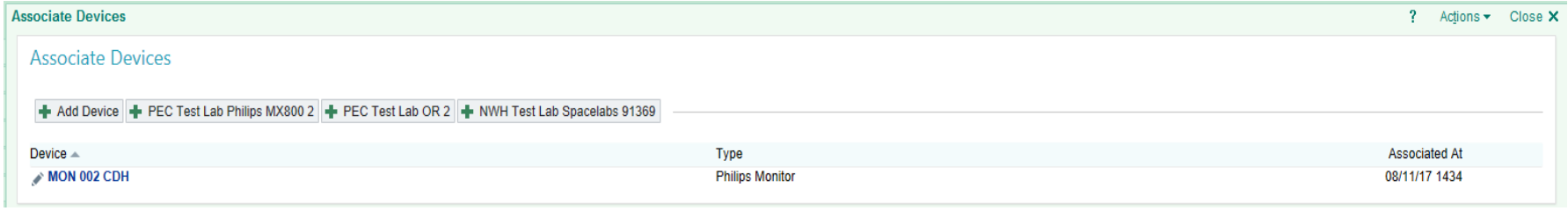
Integration Concepts - DEV Records

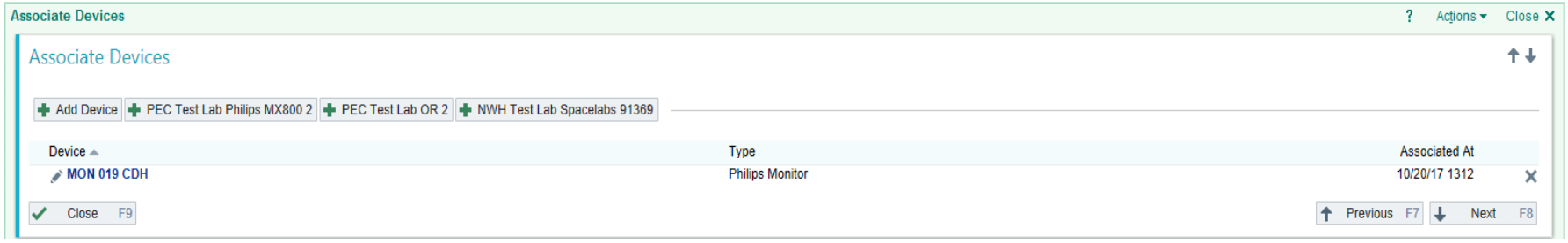
Fixed DEV (All OBIX Fetal Monitors)

- Device is automatically attached to a bed
- Clinician has to admit the patient into the correct bed in Epic to start Data Collection



Non-Fixed DEV (ventilators)

- Device is manually associated to a patient
- Clinician has to scan or manually enter the DEV of the medical device in their patient's record



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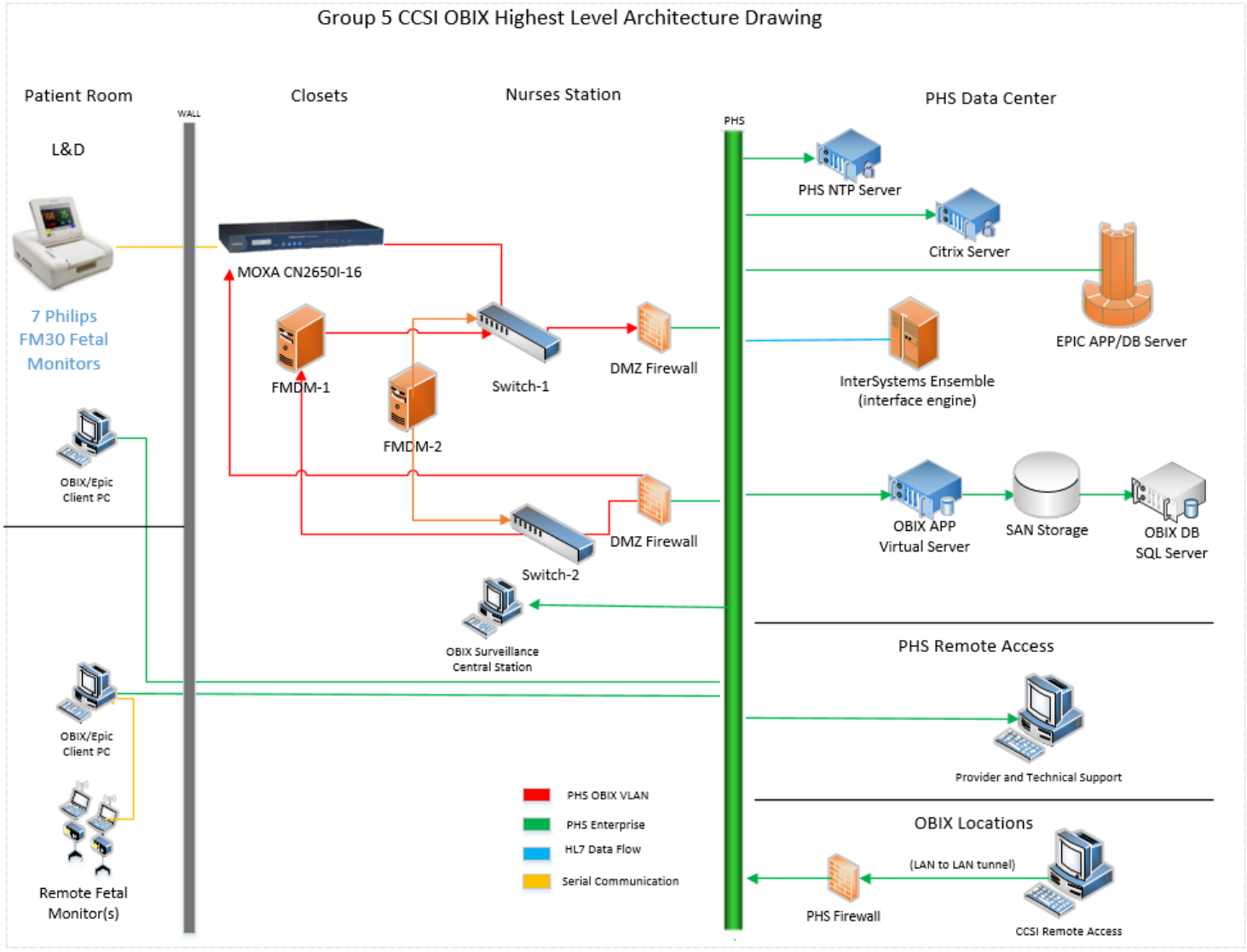
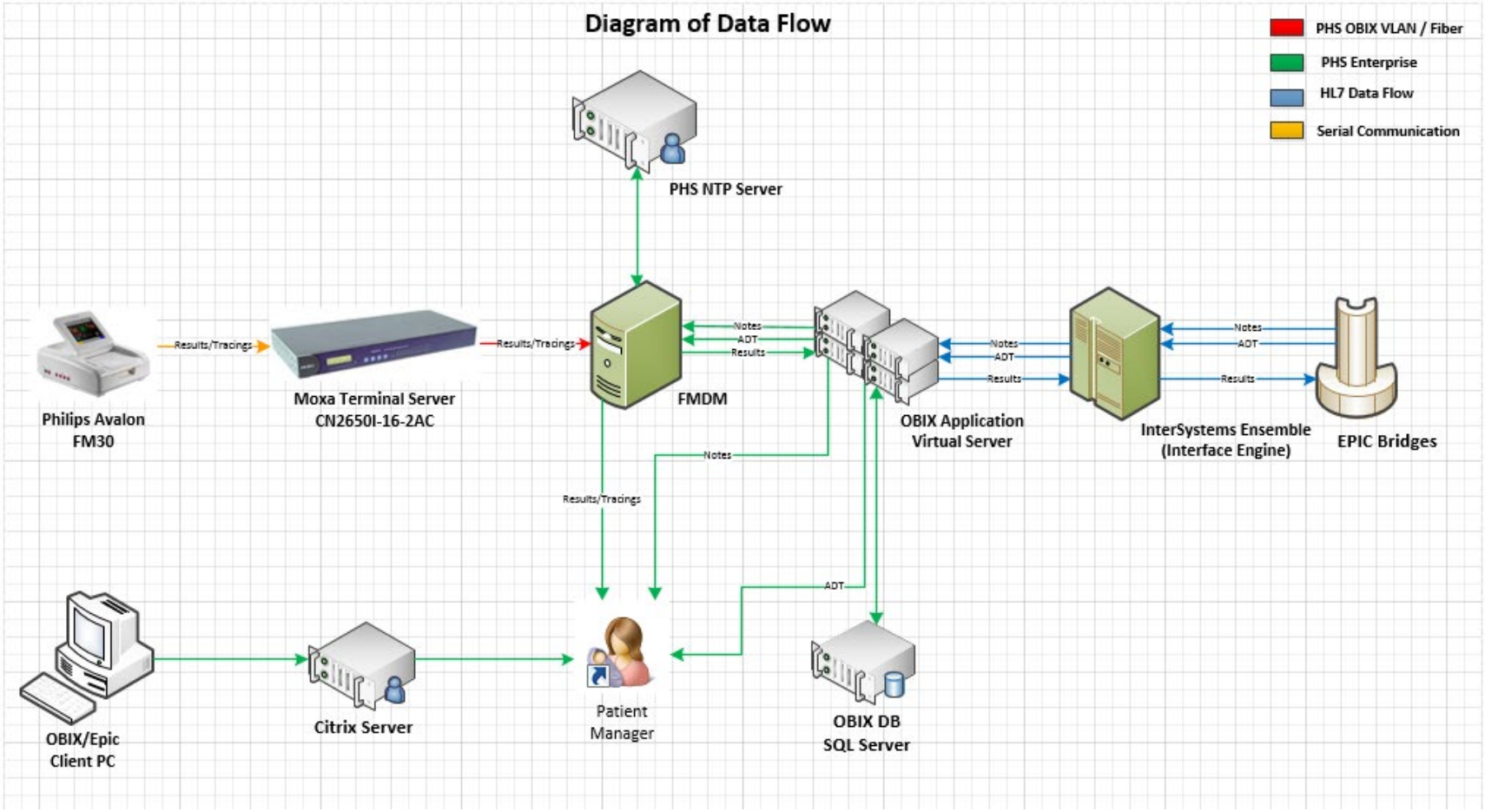
OBIX High Level Architecture Diagrams



Obix Data Flow Diagram



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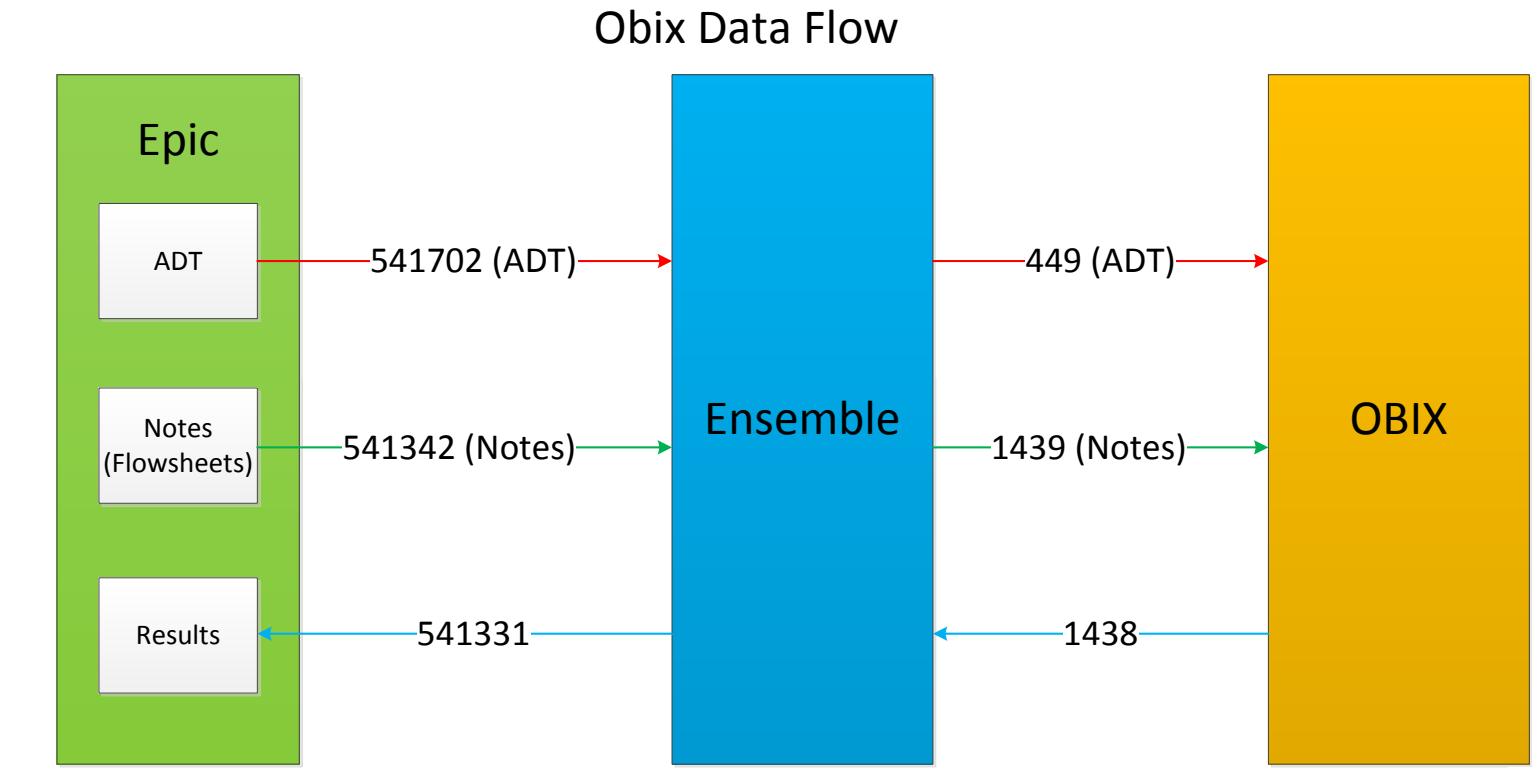
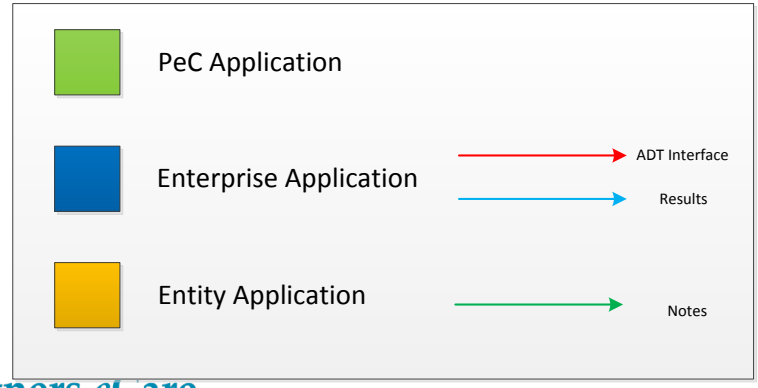
OBIX Interface Diagram





Epic-Ensemble Interfaces
541702 – PHS Outgoing ADT (Ensemble)
541342 – Partners Outgoing Documentation Flowsheet
541331 – Obix to Epic Results

Ensemble-Obix Interfaces
449 – Epic ADT to Obix
1439 – Epic Flowsheets ORU to Obix
1438 – Obix ORU to Epic Results

Bedside Workstation

- Here is a typical OBIX Workstation
  - Top monitor is surveillance and can select multiple beds by right clicking the top bar
  - Bottom monitor has Patient Manager and Epic

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Bedside Workstation

- Bedside workstations are built out by site techs
- All bedside workstations are Epic Express Builds that can only run OBIX and Epic
- You can open OBIX Surveillance and Patient Manager from the shortcuts in the start menu
  - This is how you should access OBIX during an Epic Downtime
- Epic will go into Secure mode after 6 minutes
- Epic will time out after an additional 9 minutes, requiring you to log in again
- Surveillance will remain open at all times
  - If you accidentally close the application, it will re-open after a few seconds

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Central Workstation

- Central Workstations are built out by site techs
- All bedside workstations are Kiosks and are only validated to run OBIX
- Central Surveillance will always remain open
  - The only reason these workstations should be restarted is for maintenance
- These should not have a keyboard/mouse plugged in

Fly Cart

- Fly Carts can be used in any clinical area with an IS jack
- Used for tracing off Labor and Delivery unit
- No Vitals to Epic, but trace visible at central station
- Manual Patient Entry only

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Appendix

Integration Concepts - Glossary

Term	Definition
DEV	Device that is attached to patient in EPIC
MSH	HL7 Message Header
PID	HL7 Patient Identification
PV1	HL7 Patient Visit
OBR	HL7 Observation
OBX	HL7 Observation Detail
Timestamp	Date and Time in HL7 field
OBR-10	10th field in OBR-Device identifier in HL7 message
OBX 3.1	Code in HL7 message that determines the variable being mapped to EPIC
MDC Code	Name of the code in the OBX3.1 that maps into EPIC for a specific variable

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Resources and Support Documentation

- Network architecture diagrams
  - Interface Diagrams (IP addresses and Ports)
- CDH BMDI Workbook
  - DEV inventory
  - Bed list
  - Hardware
  - Firewall exceptions
- High Level Overview Presentation
- PeC BMDI On Call schedule
- PeC BMDI Contact List
- Spreadsheet of variables sent by each device type

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High Level Integration Concepts