



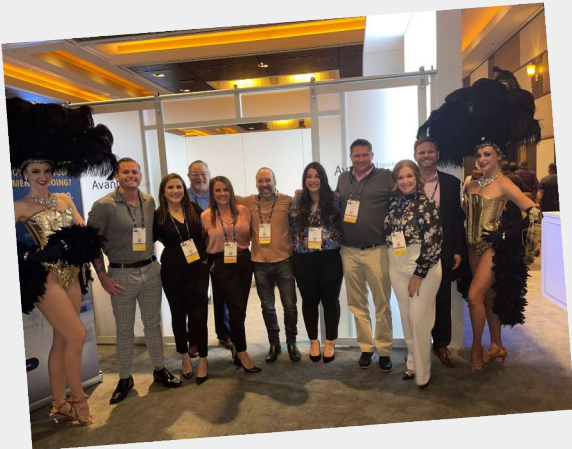
MD EXPO

April 11-13, 2023 • Houston, TX

Balancing your HTM with an I.T. Specialist for EMR Integration

3 Easy Steps to Win \$100!

1. Take a picture
2. Post on social media using #MDE expo
3. The attendee who uses the hashtag the most throughout the conference will win a \$100 giftcard!!





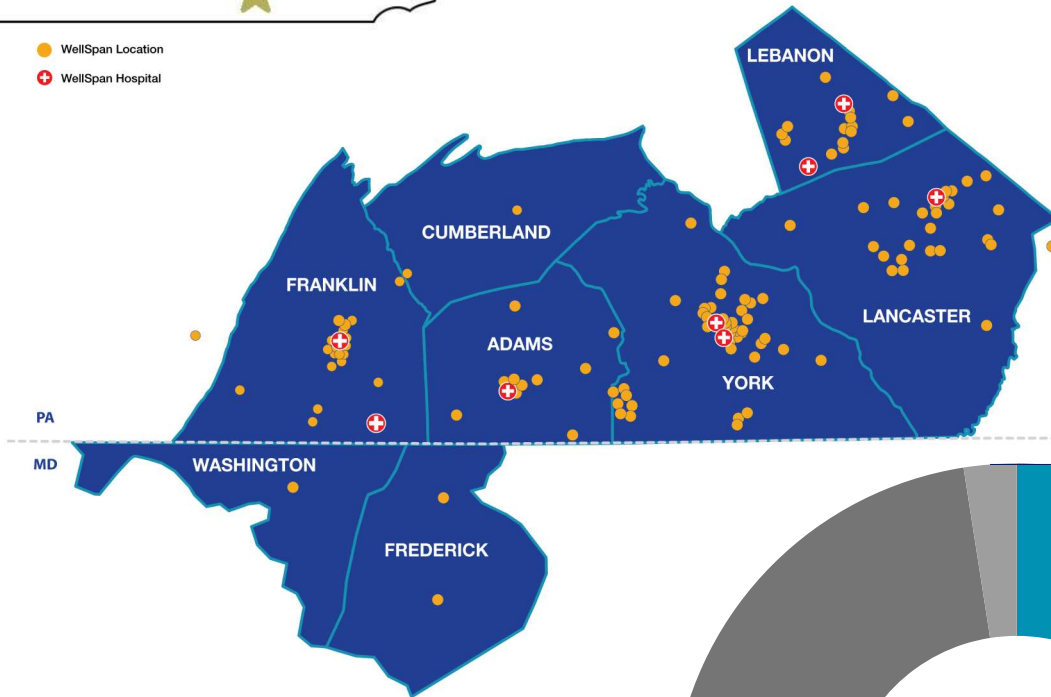
Presenter:

David Soffer CBET (2000) CCENT (2014)
Medical Device Integration Manager
WellSpan Health, South Central Pennsylvania

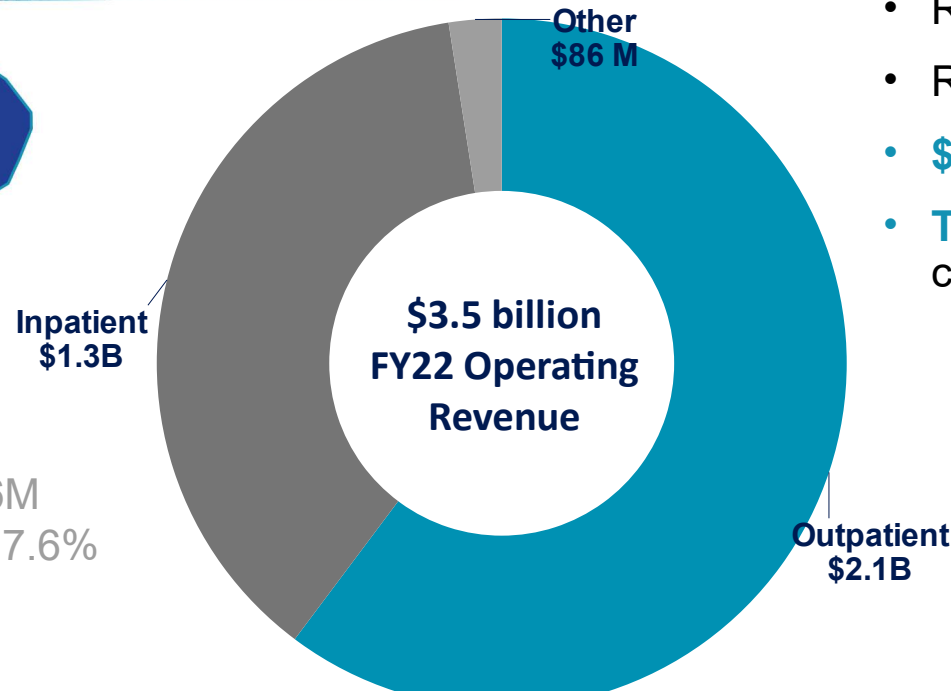
WellSpan Today



- WellSpan Location
- ⊕ WellSpan Hospital



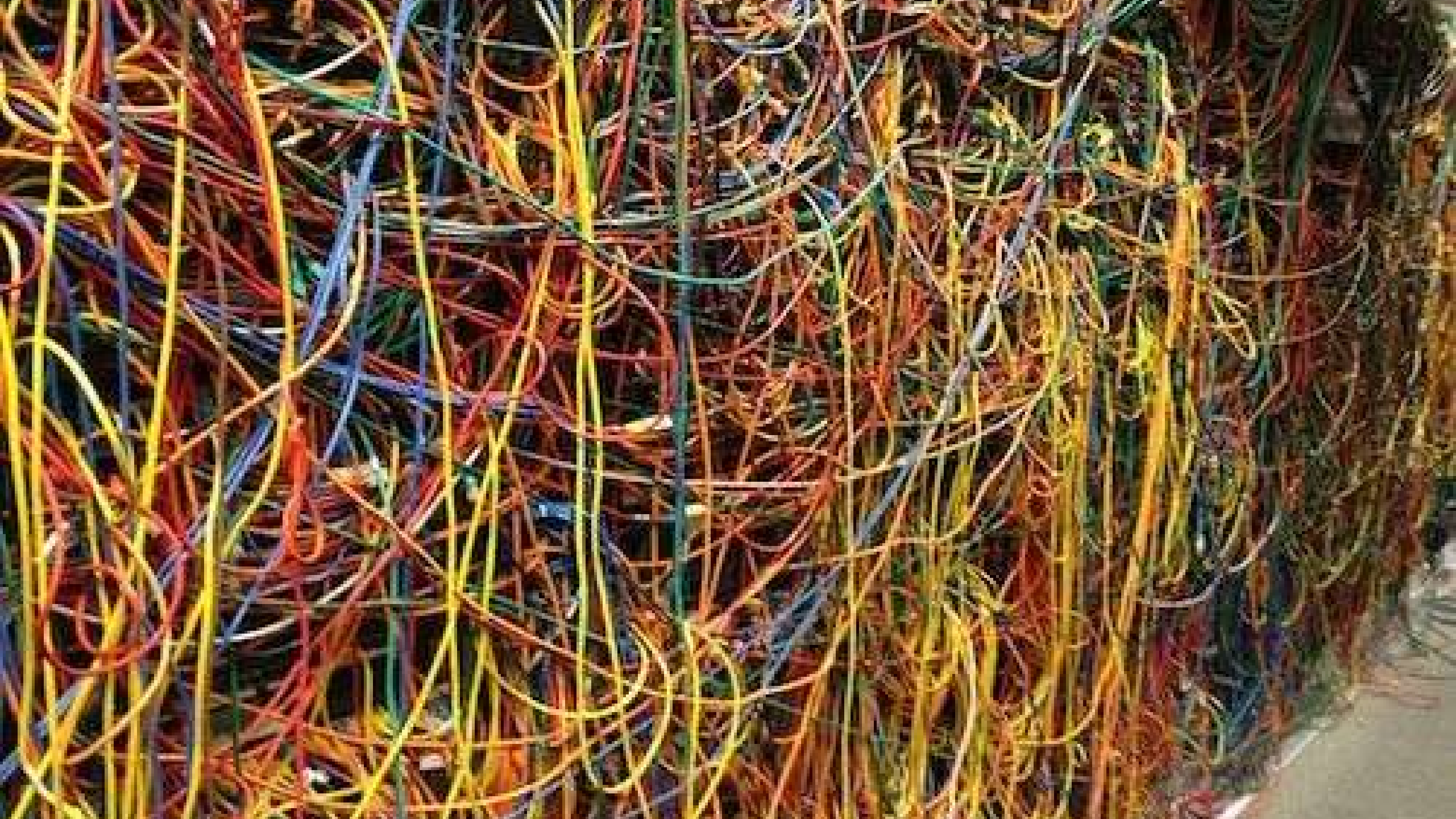
- **20,000+** team members and 3,600 volunteers
- **2,000+** Physicians/Advanced Practice Providers
- **220+** patient care locations
- **8** hospitals
- Regional behavioral health organization
- Regional home health organizations
- **\$313 million** in community benefit
- **Top 20% Credit Rating:** AA- (stable)/Aa3 (stable) credit ratings, among the top 20% in the country



- Operating Income: \$100.6M
- Operating EBIDA Margin: 7.6%
- Cares funds: \$26.1M

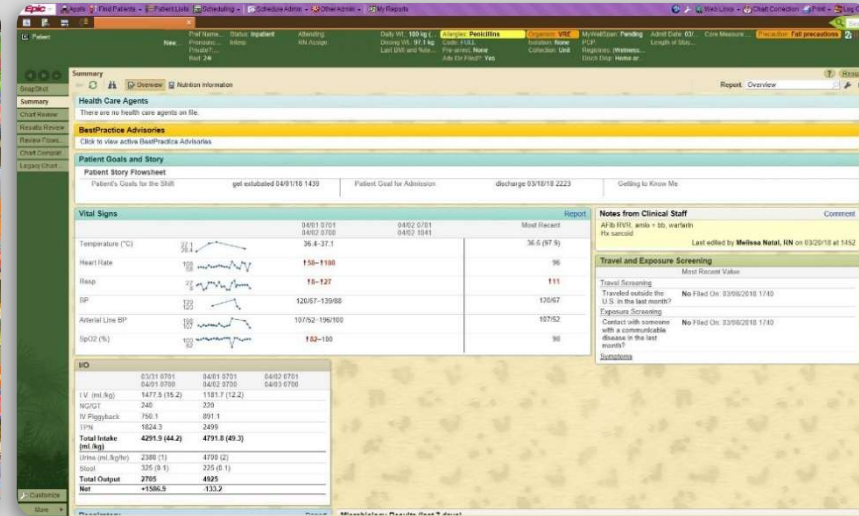
Why is I.T. and
Medical
Device
Connectivity
Important?





Past

Current



MEISS Medical Equipment I.S. Specialist

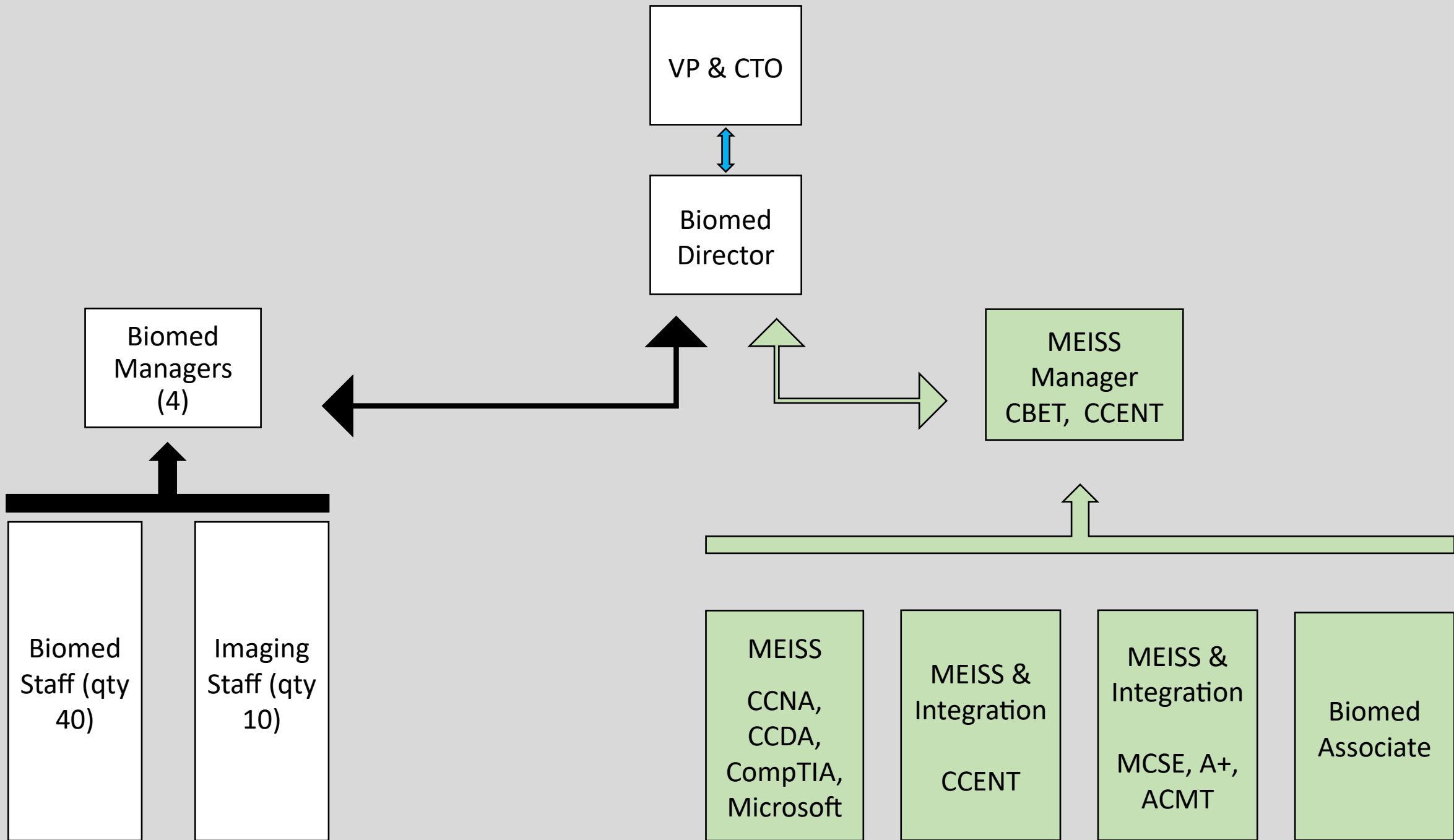
My team is responsible for medical device integration to the healthcare network and making sure the data is documenting in EMR.

We also handle unique integration to ASCOM phones / nurse call.

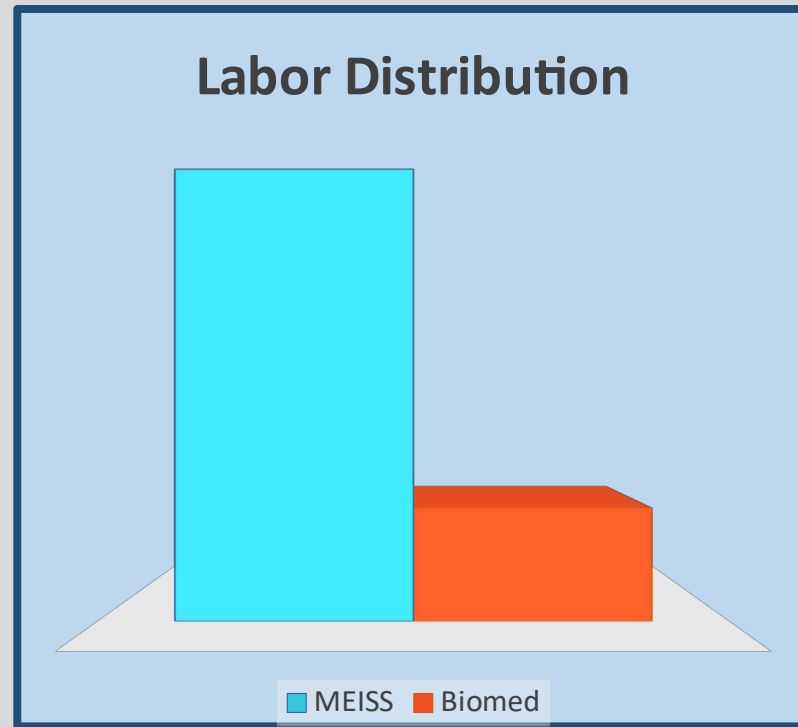
There are also special integration needs with our RTLS system that we support throughout the healthcare system along with some temperature monitoring.

We work with our Cybersecurity group focusing on medical device security.

We also provide advanced troubleshooting to assist HTM Technicians.



Labor Hour Graph



Stage 1: Advanced Preparation

Identify Project Scope

- Leadership provides the vision
- Clarify leadership's expectations for Medical Device Integration
- Provide feedback to leadership
- Be aware of "Scope Creep"

Stage 1: Advanced Preparation

Identify Your Team

- General Biomed

- MEISS
 - Team Lead
 - Team Backup

- Project Managers

- Integration and Clinical Analysts

Stage 1: Advanced Preparation

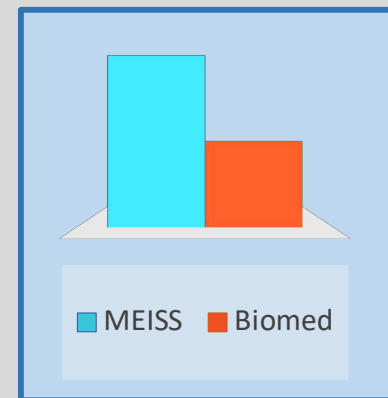
Using Your CMMS Device Inventory

- Generate inventory for Medical Device Integration
- Software Levels

Model: 91393 XPREZZON
Version: 3.05.10



Device name	Firmware version
PMP	1.71.03
PMP Boot loader	1.71.03
Comms module	1.00.00 A0003



Stage 1: Advanced Preparation

Middleware

Functions to collect data output from a medical device and convert it to a format that can be sent to the EMR

- Middleware for medical devices using serial output
 - Capsule Technologies Inc (Vents, Anesthesia, etc.)
 - Moxa Inc (Fetal Monitors with Obix)

- Gateway servers for medical devices directly connected to a network
 - Physiological Monitoring
 - Infusion Pumps
 - Vitals Signs

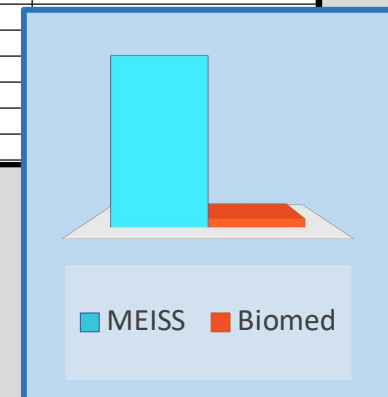
- Identify systems or devices that require changes to architecture

Stage 1: Advanced Preparation

Network Infrastructure Evaluation

- Start early to allow adequate time for cabling, networking and facilities to complete tasks
- Wireless configuration and infrastructure
- Schedule site visits to capture all details

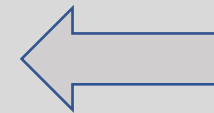
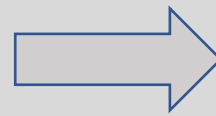
	B	C	E	F	L	Q	R	S	T	U	V	W
1	Area /Unit	Room #	Capsule Network Port Location, Wall/Boom/Ceiling/etc.	Capsule Network Wire #	Anesthesia Workstation PC Network Wire #	Physiological Monitor Port #1	Physiological Monitor Port #2	Additional Boom Port #	OR Nurse Workstation Wire #1	OR Nurse Workstation Wire #2	OR Nurse Workstation Wire #3	Misc Ports/Notes
17	OB	c-section 1	Boom - Flowi	469276	469277	469278			M3D13	M3D14	M3D15	Obix Boom- M3D07
18	OB	c-section 2	Boom - Flowi	469281	469282	469283			M3D18 (WOW)	M3D19	M3D20	Obix Boom- M3D48
19	OR	OR A	Boom - Flowi	434656	434657	434658						
20	OR	OR B	Boom - Flowi	434616	434617	434618						
21	OR	OR C	Boom - Flowi	434573	434572	434571						
22	OR	OR D	Boom - Perseus	434418	434419	434420			434411			
23	OR	OR E	Boom - Perseus	434399	434400	434401	434402		434422			
24	OR	OR F	Boom - Perseus	434376	434377	434378	434379		434371			
25	OR	OR G	Boom - Perseus	434358	434359	434360			434356			
26	OR	OR H	Boom - Perseus	434566	434567	434568			TBD- Oct 16			
27	OR	OR I	Boom - Perseus	434591	434592	434593			TBD- Oct 16			
28	OR	OR J	Boom - Apollo	434631	434632	434633			TBD- Oct 16			
29	OR	OR Endo	Boom - Perseus	434317	434318	434319			434312			



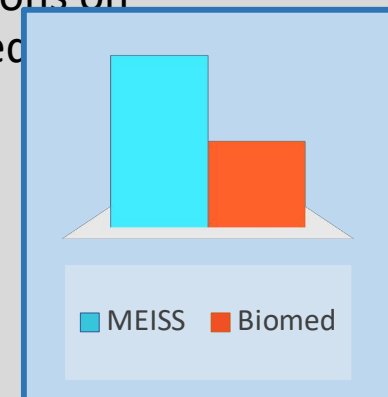
Stage 1: Advanced Preparation

Be Aware of Your Hardware

Mounting hardware
due to middleware
additions or changes



IT computer
workstations on
medical equipment



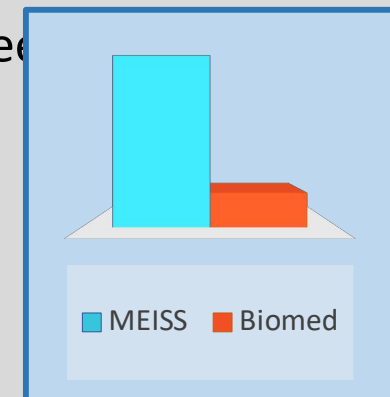
Stage 1: Advanced Preparation

Develop Standardization Beyond Software and Your CMMS

- Color coding and standard terminology



- Identify odd-ball and one off models that do not meet standards of other like devices



Current MDI Labels

MDI
Fetal
Monitor

MDI
ENDO

MDI
Patient
Monitor

MDI



Stage 1: Advanced Preparation

Medical Device Integration Testing



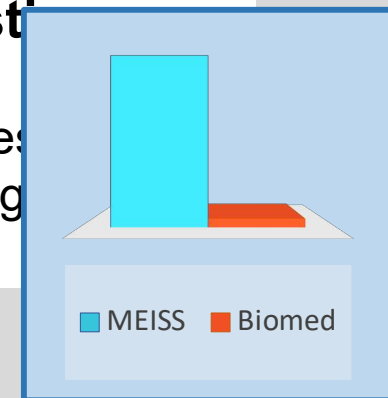
Device Type Testing

- One of each model
- All variables
- Testing with Clinical and Integration Analysts



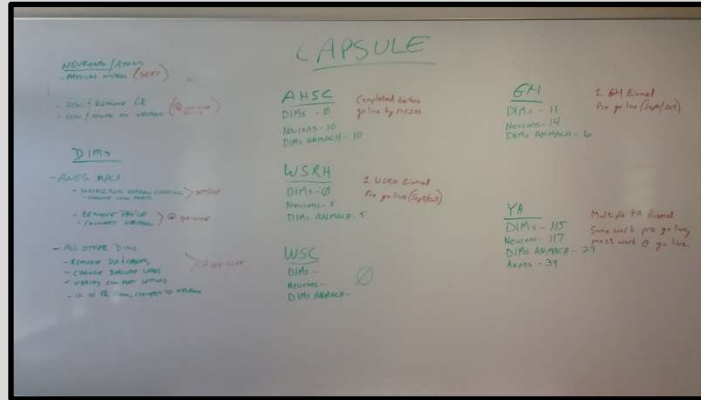
Device Test

- Every device
- Few key variables
- Testing with Integration Analyst



Stage 2: Eleventh Hour Preparation

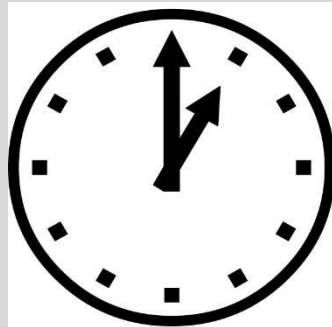
Task Brainstorm



Pre Go-Live



Go-Live

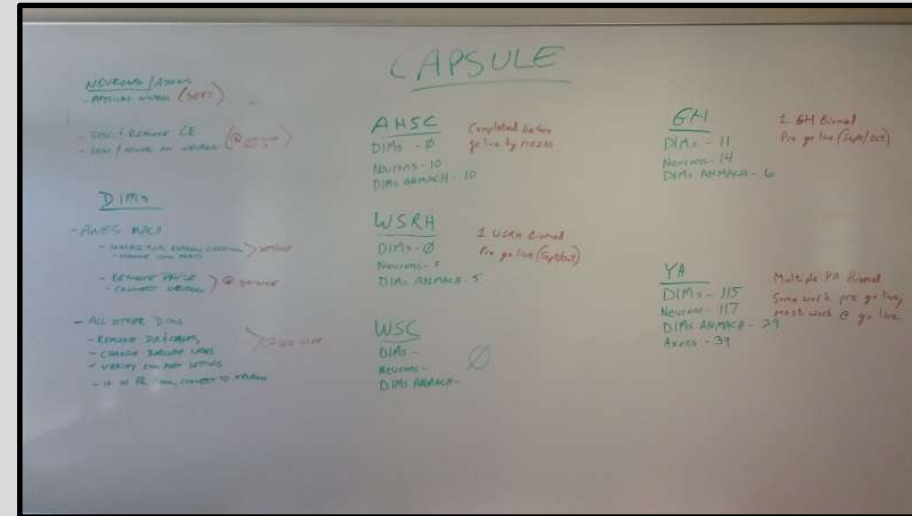


Post Go-Live

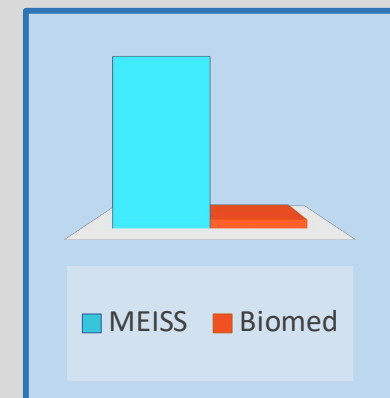


Stage 2: Eleventh Hour Preparation

Task Brainstorm



- Task Procedures
- Number of FTEs needed
- Prioritize task completion during go-live



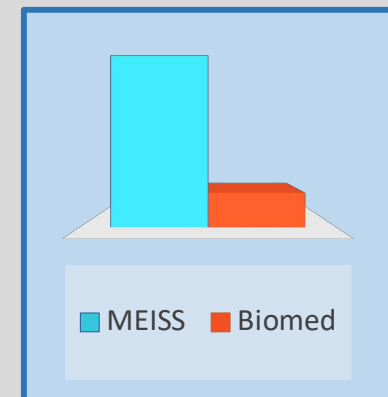
Stage 2: Eleventh Hour Preparation

Pre Go-Live Plan

Your Go-Live Month

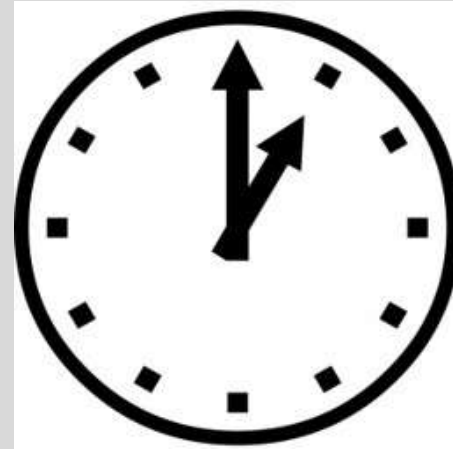
Sun	Mon	Tue	Wed	Thu	Fri	Sat
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30	31		

- Tasks that can be completed well before go-live without affecting current workflow
- Formulate FTE labor plan
- Create documentation for individual tasks and educate Biomed staff assigned
- Organize task supplies

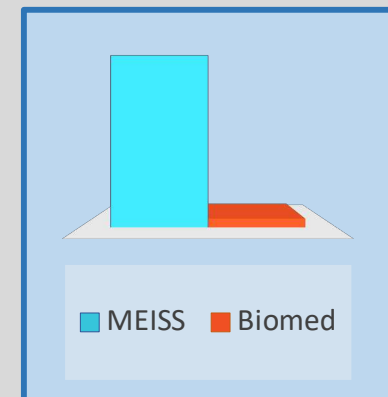


Stage 2: Eleventh Hour Preparation

Go-Live Plan



- Identify tasks that must happen during the downtime between legacy and new systems
- Prioritization is key; time is limited
- Determine communication with project command center

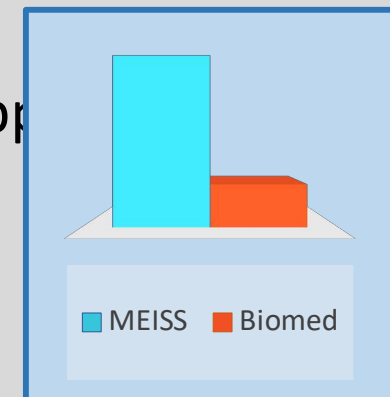


Stage 2: Eleventh Hour Preparation

Post Go-Live Plan



- Tasks that can be completed after your go-live has transitioned into operation
- Generate cycle of 24x7 Biomed / Integration Lead support for a short amount of days post go-live
- Generate an extended Integration Lead support the cycle for the project command center



Stage 3: Execute Your Plan

From Brainstorm to a Master Plan

MEISS/Biomed Cutover Tasks

WSRH/AHSC/AHMFMM

Pre-Go-Live, Week of 10/9 [1 Tech]

1.1.1 Spacelabs Dan T.

- o Install scanner
 - 24 @ WSRH
 - 4 @ AHSC PACU

10/19 [2 Techs]

****At close of business****

1.2.1 Qbix: Tech #1 Dan T.

- o Remove Cerner CE & DA
- o Connect Qbix Cable
 - 4 @ AHMFMM
- o Network cross-connects for Qbix
 - IN:00677124

1.2.2 Capsule – WSRH OR (5) Tech #1

- o Remove Cerner DA & CE
- o Connect Network cable and verify Neuron/DIM connections

1.2.3 Capsule – AHSC OR (10) Tech #1

- o Log into Smartlinx1 Neuron Manager and verify all Neurons are online

1.2.4 Welch Allyn - WIC (2), AHMC (3) Tech #2

- o Reprogram Scanner
- o Reprogram CVSM with master USB
- o Enter correct wireless account
- o Login to verify connection
- o Tag with "Configured for Epic" Label

1


Welch Allyn Go-Live Steps for ECH

1. Turn power off
2. Plug new scanner into USB port
3. Plug USB thumb drive into USB port
4. Enter Service Menu
 - Settings>Advanced> code 6345
5. From Service/General tab select "Configure from USB"
6. Configure Wireless account
 - Network>Radio>enter info from spreadsheet>Configure Radio
7. Exit Advance settings and verify wireless connection
8. Scan test barcode to verify that the "AC" is not displayed along with the number in the lower left corner of the display

Note** this test will not pull in patient information

Sample #1 Sample 2D Aztec barcode to simulate patient ID.


Decode scan should result in only "30086" being sent to the CVSM.



AC30086

Sample #2 Sample 1D Code 128 barcode.

Decode scan should result in only "30086" being sent to the CVSM.



AC30086

Stage 3: Execute Your Plan

Biomed Tasks

➤ Kits for every task contain all required items

- Documentation

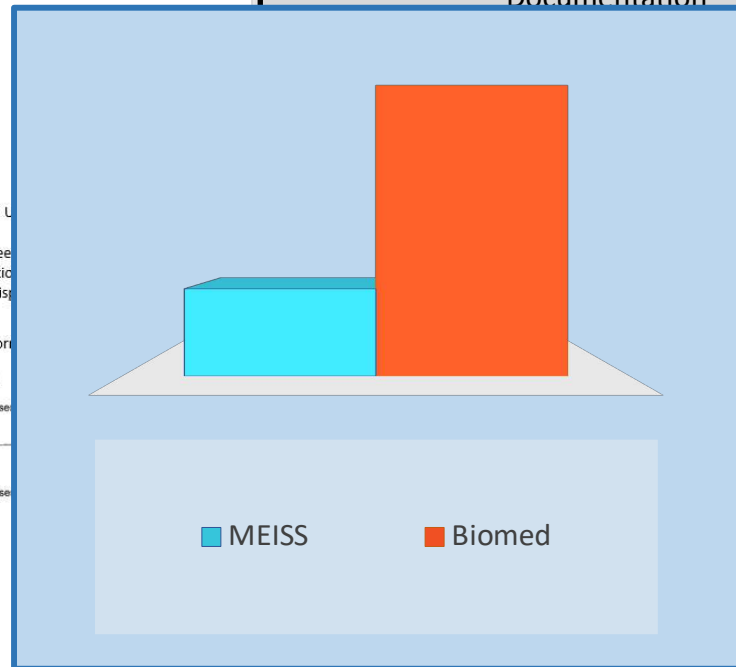
Welch Allyn Go-Live Steps for ECH

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Settings>Advanced> code 6345
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6. Configure Wireless account
Network>Radio>enter info from spreadshee
7. Exit Advance settings and verify wireless connectio
8. Scan test barcode to verify that the "AC" is not dis
number in the lower left corner of the display

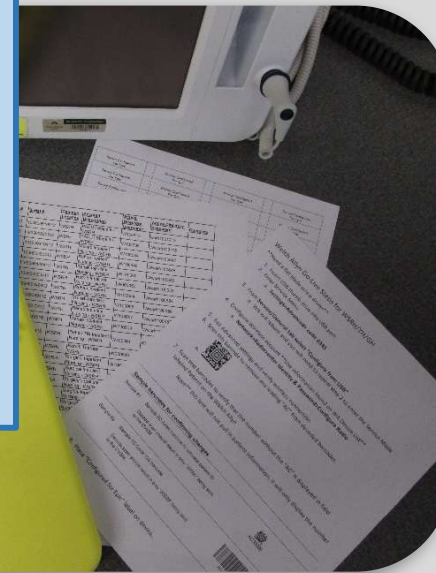
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Sample #2 Sample 1D Code 128 barcode.
Decode scan should result in only "30086" being se
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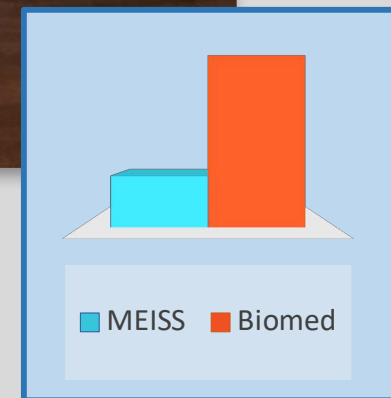


complete" Labels



Stage 3: Execute Your Plan

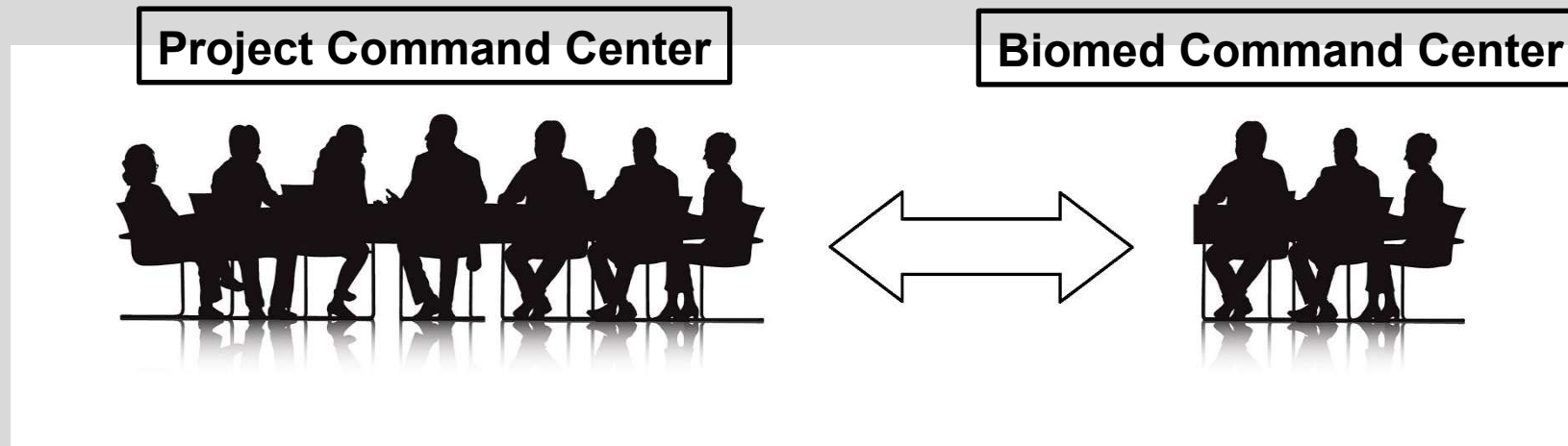
Make It Easy!!



Stage 3: Execute Your Plan

Mission Control

- Biomed creates a small internal Command Center with one point of contact for all teams, including the Primary Project Command Center

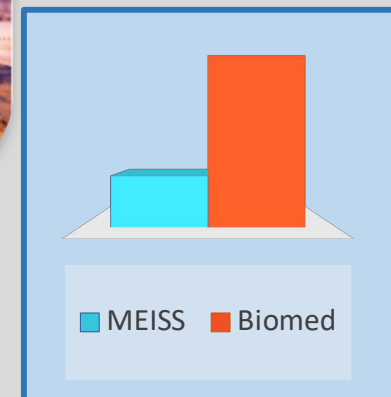


Stage 3: Execute Your Plan

- Integration Lead Functions as Traffic Control
 - Addresses Issues as they arise
 - Reallocates workforce as needed
- Have a planned handoff to subsequent shifts
- Transition from Go-Live to Extended Support



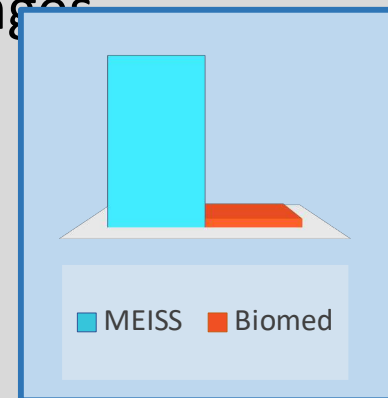
<https://www.skyguide.ch/en/work-at-skyguide/career-types/air-traffic-controller/>



Stage 4: Ongoing Support

Post Project: What Happens With Your Integration Lead?

- Documentation to support Biomed
- Record information in CMMS
- Standardize a way for customers to request additional device connectivity
- Monthly meeting to review connectivity projects
- Testing software, version and network changes



Stage 4: Ongoing Support


Biomed Support


➤ Create Bio of t

➤ Support Inte

Devices

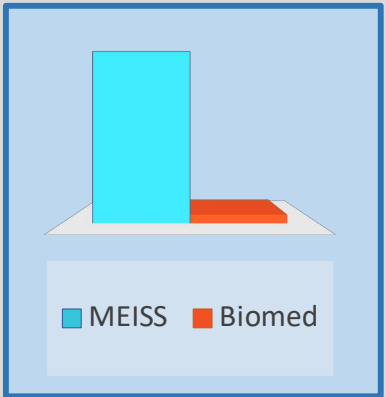
h to


WELLSPAN[®]
HEALTH
Medical Device Integration to EMR
CareFusion 8015 PCU & M8100 Channel



Sections of this document will contain the following:

- Documenting and finding connectivity information in TMS
- Configuring PCU for wireless connectivity
- Printing P2DA Aztec barcode stickers for the channels



Stage 4: Ongoing Support

Record Information in CMMS

- Network connection information
- Unique device settings
- Software levels



Medical Device Integration Data Asset: 48142

List

- Spacelabs
- CareFusion Infusion
- CareFusion PCU

Asset

Asset Number: 48142

Classification

Category: Equipment, Medical, General - EMG

Sub Category: Monitors, Physiologic, Patient Transport - 17588

Type: Survey - S

Account: 200.6010

Nursing Affairs - 200.6010

Status: Active - ACTIV

Identification

Asset Description: Monitors, Physiologic, Patient Transport

Location

Segment: Biomed - 3

Spacelabs Data

Campus Location: YH

AZTEC Barcode / P2DA Long

IP Address: 172.20.36.9

SubNet Address: 255.255.255.0

Gateway Address: 172.20.36.254

SubNet Name

SLNI

Monitor Name: MEISS

SLB Node ID: 522

Network #: 7

Monitor Loader: 9

Cable #

Software: 2.03.11

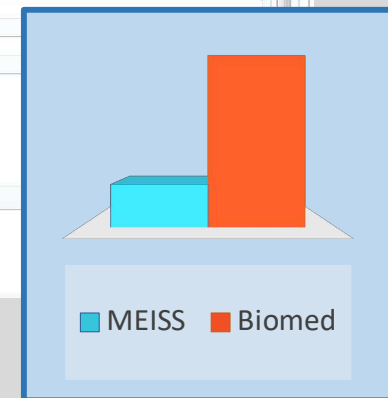
Extended Description

Spare

Is Water Involved: False

Has Patient Information: True

Removed AeroScout Tag: False

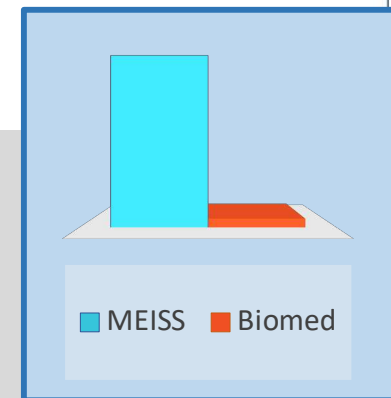


Stage 4: Ongoing Support

Customers Request Connectivity

The screenshot displays the Remedyforce Self Service interface. The top navigation bar includes links for Home, Remedyforce Console, Remedyforce Dashboard, Remedyforce CMDB, Reports, Remedyforce Workspaces, Remedyforce Self Service (highlighted), Knowledge Articles, and Dashboards. Below the navigation bar is a search bar with the text 'integration' and a 'Search' button. To the right of the search bar is a link that says 'Could not find what you need? [Submit a Ticket](#)'. Below the search bar, there are two tabs: 'Service Requests' (selected) and 'Remedyforce Knowledge Articles'. The main content area shows three search results, each with a brief description and a small icon:

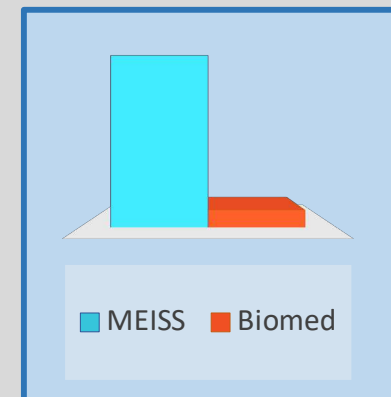
- Medical Device Integration to Electronic Medical Record**
Request to connect medical device to electronic medical record
- Medical device wireless account - creation**
Template to create a new wireless account
- Medical device wireless account - retire**
Template to retire an account



Stage 4: Ongoing Support

Monthly Meeting

- Multi-department meeting with Networking, Biomed, Integration and Clinical Analysts, Hospital Leadership and Integration Lead
 - Review existing connectivity projects
 - Review new requests for connectivity
 - Discuss challenges with vendors



Monthly Meeting:

I.T. teams, Epic teams, Nursing Informatics, Clinical Leadership, Technical Leadership, Project Managers

MDI to Epic Meeting | MDI to Epic Meeting | Search (Ctrl+E)

3-9-23
Thursday, February 9, 2023 12:01 PM

Current Business

TICKET #	TOPIC	DISCUSSION	OWNER	ACTION/NOTES
	Ascom Integration		Broc / Erin / Kristen	<p>8-11-22 Device testing was successful. Pilot go-live TBD.</p> <p>9-7-22 Pilot scope has changed. Looking to deploy Myco3 at Ephrata Hospital. Pilot date TBD.</p> <p>9-15-22 Kickoff meeting with Ephrata. Info to follow.</p> <p>10-12-22 Pre-deployment device testing scheduled for Nov 8th.</p> <p>10-27-22 Postponed until further notice.</p> <p>11-10-22 EUC to start building out devices over the next week or two.</p> <p>12-8-22 Waiting for EUC to complete their tasks. Testing would happen after Jan 1st, 2023.</p> <p>1-26-23 Testing occurred on Jan 13th and 19th. Nurse call events tested successfully and most Impravata/device testing was successful. Ascom Login application may need reinstalled to incorporate phonebook feature. EUC to assist. Go-live date TBD.</p> <p>2-9-23 Tentative pilot go live is March 7th. Held remote hosted review to install Unite collaborate application to provide phone book feature for users at ECH. Device testing will be required after EUC pushes application to all pilot devices.</p>
	New GE Carescape Gateway servers at YH	Refreshing servers old for new. New options allow for VM and can go into the data center.	Angie / John	<p>6-2-22 Meeting to discuss what is needed w/ GE. Waiting on a quote for physical hardware to have it onsite. Randy Echterling will review connectivity plan once GE provides.</p> <p>7-14-22 - New monitors installed in NICU. Need to validate data points because of new software version.</p> <p>10-13-22 Angie to touch base with Phil Galloway for status / next steps.</p> <p>10-27-22 Info given to Phil Galloway (sales) and he is forwarding to Jen Gladowski (PM from GE).</p> <p>11-9-22 Jen sent out a meeting invite for 11/16. (Jeremy and Peter did not receive an invite for 11-16. Can they be added?)</p> <p>11-10-22 Follow up with Dave and Angie for meeting invite.</p> <p>11-30-22 Weekly calls are being conducted.</p> <p>11-30-22 A walk through is scheduled for 12-12-22</p> <p>12-21-22 Calls continue. WS needs a Network Diagram. There has been some change to the scope of the project.</p> <p>1-10-23 Another walk thru was conducted with Thomas Hart and Phillip Galloway. They took the same notes that JoJan took weeks ago</p> <p>1-25-23 This week's meeting was cancelled because GE is working on things behind the scene and have nothing to share with the WS team</p> <p>2-1-23 Waiting on GE to create Network Diagrams and get back to WS team. Calls continue every Thursday</p>
SR02564744 - purchase SR	Replacement Neuron 2 devices with Neuron 3 devices.		John / Angie	<p>10-21-22 New Neurons arrived</p> <p>10-25-22 Unboxing occurred and moved into MEISS room at IROB</p> <p>11-3-22 Programming of the Neurons have started</p> <p>11-10-22 AHSC and WSRH OR Neurons Programmed and ready for deployment. Working to finalize an installation date.</p> <p>11-30-22 GH and ECH Neurons have been programmed and ready for deployment.</p> <p>12-7-22 GH and WHSC Neurons are installed.</p> <p>12-15-22 WSRH and AHSC Neurons are installed.</p> <p>1-12-23 YH, ECH and GSH installs to be scheduled.</p> <p>1-25-23 RMA Neuron 3 was shipped</p> <p>1-25-23 We will be swapping out YH Cath lab and EP lab for Tuesday, evening, 2-7-23. If there are any issue I will call Brian Bauer directly.</p> <p>2-7-23 YH Cath Lab, EP Labs, and MRI are completed. The work at YH went well. Next up is entire ECH on 2-15-23</p> <p>2-15-23 ECH is complete</p>
02777438	Map additional parameters for ECH MRI patient monitor (Phillips IP5 monitor)	Michael Souhrada would like a couple additional parameters mapped (Agent and Gas)	John Brunner / Angie / Kristen Kauffman	<p>10-24-22 Email sent to Angie to start discussion.</p> <p>11-10-22 John will follow up with Kristen now that she is back from PTO</p> <p>11-15-22 John emailed Kristen a list of devices and which hospital they are located at</p> <p>11-16-22 Broc & John looked at the 3 devices in the YH MRI area. They do not have gas modules.</p> <p>11-16-22 Talked to Jeremy Hetrick. He confirmed YH only has 3 devices and the devices don't have a gas module. Jeremy also confirmed that no licenses are needed and everything is controlled from the gas module</p> <p>12-2-22 I talked to Kristen and this project is in fact finding mode and is moving forward.</p> <p>12-5-22 John emailed Matt Menicucci to see if he can run and see if they have a gas analyzer and if they use those two parameters</p> <p>12-8-22 Kristen gave the OK to map the additional parameters and sent Angie an email for her approval.</p> <p>12-23-22 Ticket was created and assigned directly to Angie</p> <p>12-23-23 Teams message sent to Michael Souhrada asking for the additional parameters that he would like mapped</p> <p>1-3-23 Email was sent to Michael Souhrada asking for a list of the additional parameters</p> <p>1-13-23 Received email from Michael Souhrada</p>

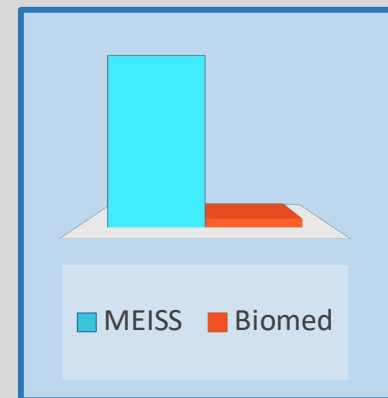
+ Add Page

- 9-10-20 Closed
- 10-8-20 Closed
- 11-12-20 Closed
- 12-10-20 Closed
- 1-14-21 Closed
- 2-11-21 Closed
- 3-12-21 Closed
- 4-8-21 Closed
- 5-13-21 Closed
- 6-10-21 Closed
- 7-8-21 Closed
- 8-12-21 Closed
- 9-9-21 Closed
- 10-14-21 Closed
- 11-11-21 Closed
- 12-9-21 Closed
- 1-13-22 Closed
- 2-10-22 Closed
- 3-10-22 Closed
- 4-14-22 Closed
- 5-12-22 Closed
- 6-9-22 Closed
- 7-14-22 Closed
- 8-11-22 Closed
- 9-8-22 Closed
- 10-13-22 Closed
- 11-10-22 Closed
- 12-8-2022 Closed
- 1-12-23 Closed
- 2-9-23 Closed
- 3-9-23

Stage 4: Ongoing Support

Testing Software

- Interoperability testing new software levels with Integration and Clinical Analyst
- Mapping of clinical parameter updates
- Device type testing for system wide upgrades
- Network testing due to configuration changes



In Conclusion

WellSpan Health Statistics

Cerner EMR

Mid -2000s through
2017

Epic EMR

2017 - current

Medical Devices Connected to EMR

- Infusion Pumps / PCAs / Syringe Qty 3500+
- Spacelabs & GE Physiological Monitors Qty 900
- Welch Allyn Connex Vital Signs Monitors Qty 600
- Critical Care Ventilators & BiPap Qty 200
- GE Corometrics Fetal Monitors Qty 100
- Anesthesia Machines Qty 95
- Cardiac Output Monitors Qty 32
- Balloon Pumps Qty 14
- CRRT Dialysis Qty 14