



2023-2024 Educational Webinar Series

CMMS Success Stories – Getting Actionable Reports Out of Your Service Data

November 09, 2023

Speakers:

Barbara Maguire, MS, MBA, CCE, FACCE
ISS Solutions

Arleen Thukral, MS, CHTM, CCE & Joseph Gucciardi, MS
VISN2 Veterans Administration

ACCE gratefully acknowledges the sponsorship of the
2023-2024 Educational Webinar series by



HEALTHCARE TECHNOLOGY SOLUTIONS
ENHANCING THE CLINICAL EXPERIENCE



Logistics

- ❖ All attendees have their microphones muted during the presentation.
- ❖ Questions to the panelists must be submitted via the “Q&A” feature in Zoom at any time. They will be addressed at the Q&A portion.
- ❖ If there is any urgent issue, please use the “chat” feature to communicate with the host/moderator.
- ❖ Please remember to complete the webinar evaluation after attending. A link will be provided at the end.

About the Moderator



Mike Powers, MBA, AAMIF, CHTM, CDP, CMDA

Clinical Engineering Director

Intermountain Healthcare

ACCE Education committee co-chair

Mike Powers is a Clinical Engineering Director at Intermountain Healthcare, headquartered in Salt Lake City, Utah. Mike co-leads a task group for the Health Sector Coordinating Council on Legacy Medical Device Cybersecurity. He is a vice chair of the AAMI Healthcare Technology Leadership Committee.

Prior to Intermountain, he was the Clinical Engineering Quality Manager at ChristianaCare Health System. He has an MBA in Healthcare Administration from Wilmington University and is a Certified Medical Device Auditor.

Session Description

Uncover CMMS Success Stories as we explore how to transform service data into actionable reports.

Get the healthcare organization perspective on processes to harness these reporting insights for informed decision-making.

About the Speaker



As Vice President of Healthcare Technology Management, Barbara Maguire directs all aspects of the healthcare technology management (HTM) line of business' service delivery and CMMS consulting.

She ensures that all HTM programs provide clients with the best value and meets all regulatory and inspection requirements. She also oversees ISS Silutions' CMMS consulting offerings, helping other HTM programs improve their data and streamline their CMSS workflows.

When not working, she enjoys cycling and playing pickleball.

Barbara Maguire, MBA, CCE, FACCE



About the speaker



Arleen Thukral, MS, CCE, CHTM

[Linked In](#)

Arleen has over 10 years of experience in the development and management of a complex, professional, highly technical healthcare technology management program that meets or exceeds Joint Commission, NFPA, OIG, FDA and other applicable healthcare regulatory requirements in New York and New Jersey VA Medical Centers. She leads a team of dedicated HTM professionals (over 120 service line staff) supporting 9 medical centers and transition to a new CMMS (Nuvolo).

The program is responsible for over \$478M dollars of medical technology and provides safe, reliable maintained medical equipment for the delivery of quality health care in a cost-efficient manner (\$42M cost saving/avoidance).

About the speaker



Joseph Gucciardi, MS

Joseph is a Regional Clinical Engineer who has served as a technical expert in support of the VA's CMMS pilot of Nuvolo. He continues to support CMMS operations for the region, advising on new initiatives, enhancements, and managing remediations. He leads CMMS reporting and data visualization initiatives for the VA Medical Centers across New York and New Jersey.

Prior to his current role, he has supported clinical engineering operations for Dartmouth Hitchcock, and the White River Junction and Greater Los Angeles VA Medical Centers. He is a graduate of the UConn Clinical Engineering Master's Program, a US Army Veteran, and a Purple Heart Recipient.

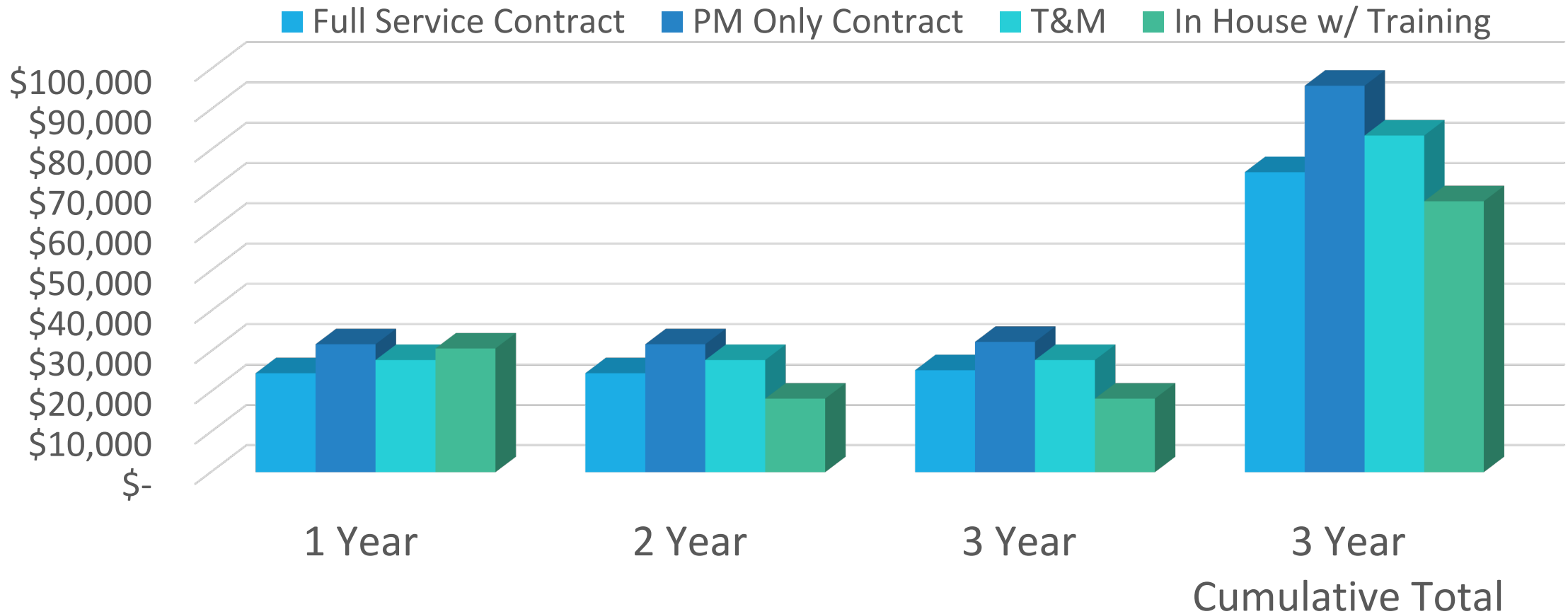
Data Standardization

- Foundational to all uses of CMMS
 - ✓ Asset Types
 - ✓ Manufacturer
 - ✓ Models
 - ✓ Facilities/Locations
 - ✓ Acquisition cost
 - ✓ Contract Coverage
 - ✓ Vendor service data
- Imports of new data
- Cleanup existing data
- Institute processes to maintain clean data



Accurate Service Histories Support In-Depth Analysis

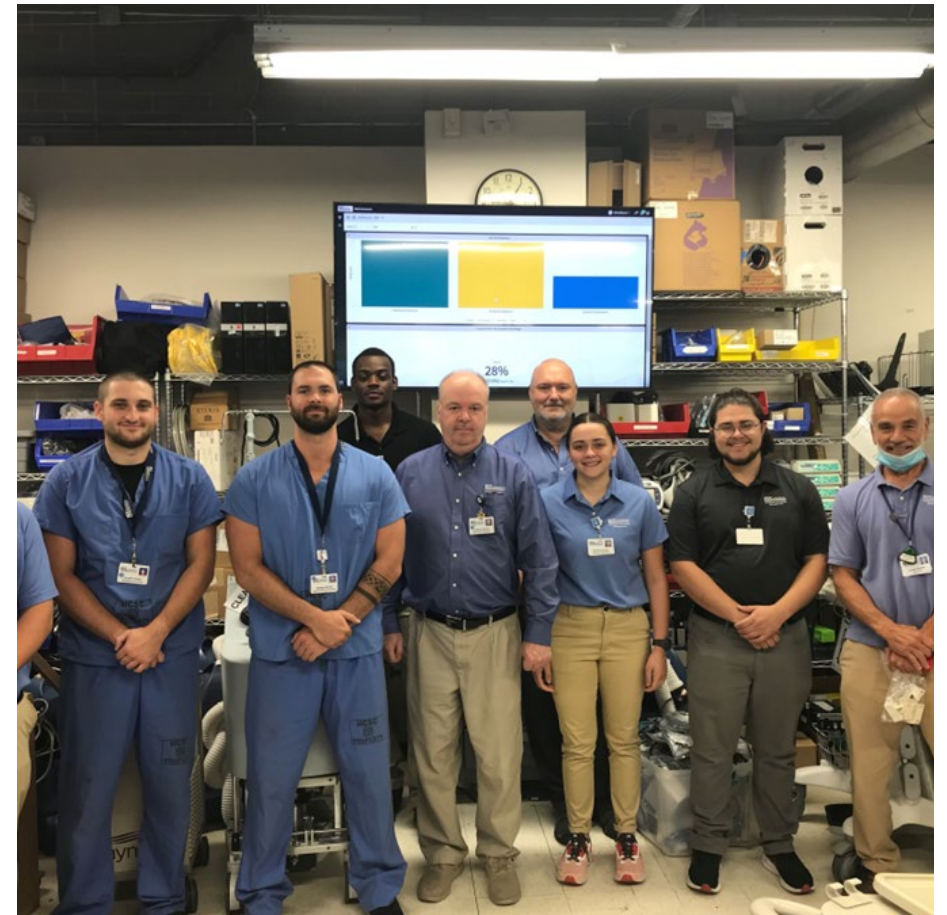
Baxter Prismax Service Options



Workload Visibility

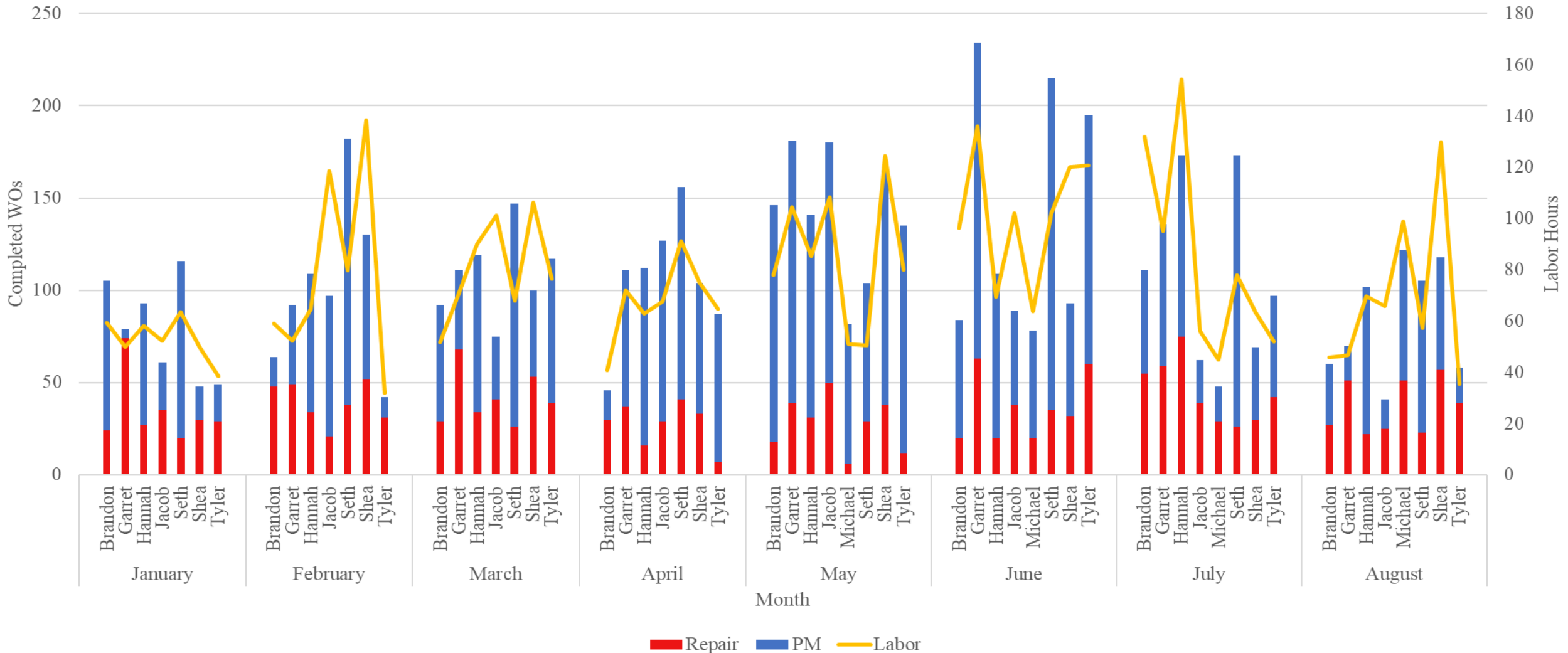


Technicians developed dashboards to improve visibility of monthly workload



Work Balancing YTD

Completed Work Orders and Labor Hours Per Month



Service Strategy Decisions

Optimize coverage strategy by device type



Requires collection of accurate maintenance data to facilitate review of expenses at least 90 days ahead of renewal

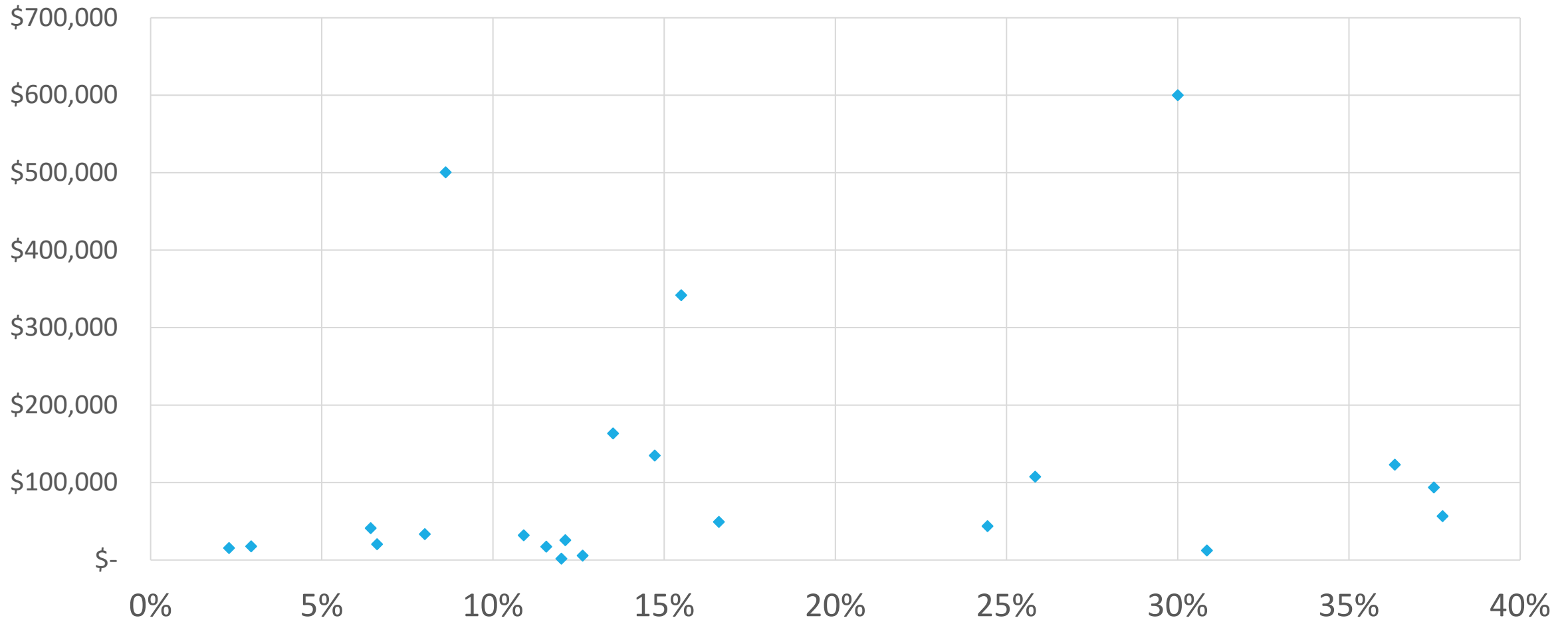


Set up SLAs and PM scheduling to match contract terms to monitor ongoing vendor performance



Identifying service contracts to target

TOTAL SERVICE COST VS COST OF SERVICE RATIO (COSR)

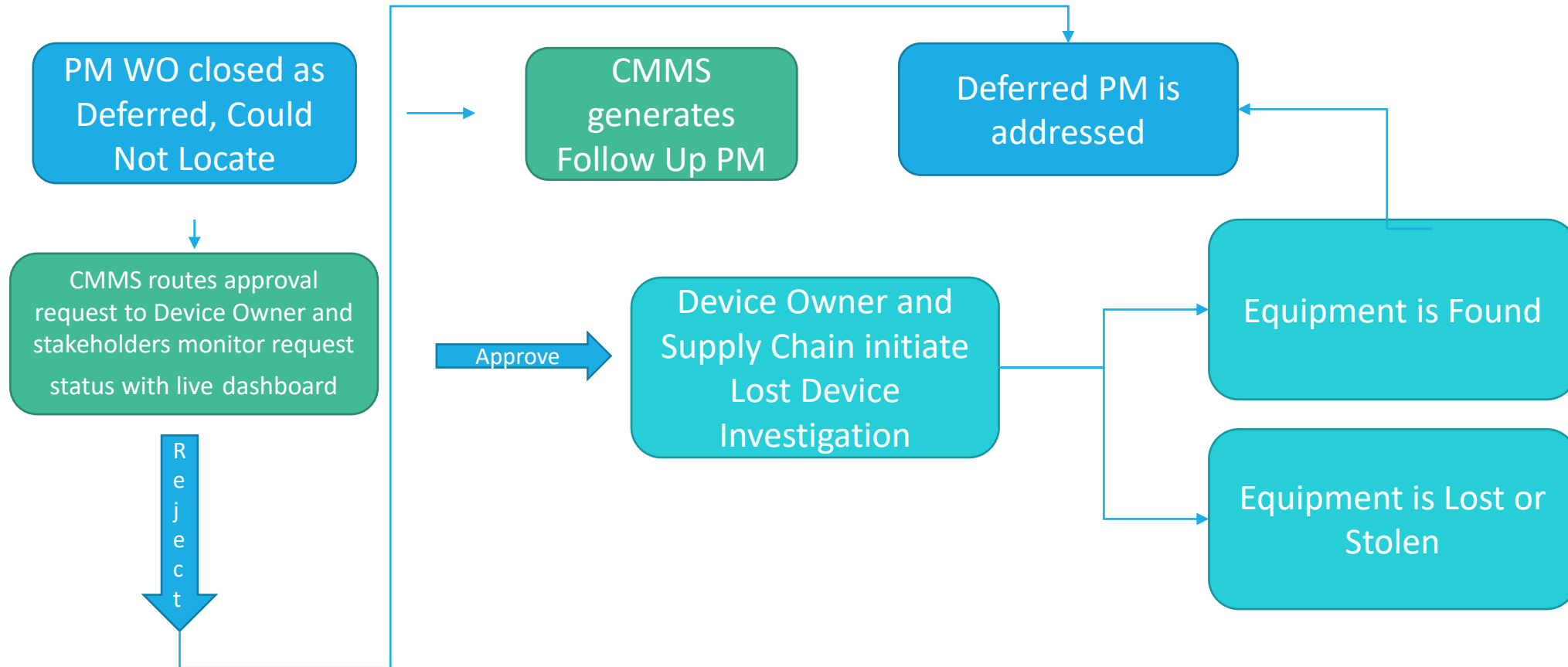


Sharing Best Practices

- ◆ ISS Solutions is a Nuvolo Partner and assists Nuvolo clients in implementing these strategies
- ◆ The strategies shared can be implemented on other CMMS systems



CMMS Automatic Workflow-CNL PMs



CMMS Automatic Workflow

Home > Approval Form

This Clinical Work Orders approval requires approval by Zack Amrane (VACOAmranA)

State Requested
Created about an hour ago

Device could not be found by HTM Staff. Click Approve if EIL manager agrees that device cannot be found and certifies that device Report of Survey is to be initiated. Click Reject if device is found but indicate in comments updated location.

Approval request for Clinical Work Orders CWKD0012097

test
Opened by Oleg Beneraf (VHAMORBenerO)
Approver Zack Amrane (VACOAmranA)

Activity Stream

Type your message here... Send

Oleg Beneraf (VHAMORBenerO)
04/05/2022 17:56:40
CWKD0012097 Created

OB

Start

Fwd: Missing PERFECTO2 Unit on 7B: Clinical Work Orders CWKD0030548 Approval ...

Price, Michael C.
To Thukral, Arleen

Reply
Reply All
Forward
...

Fri 10/7/2022 7:58 AM

From: Greathouse, Kelly R. <Kelly.Greathouse@va.gov>
Sent: Wednesday, October 5, 2022 1:33 PM
To: Antalek, Emily A. <Emily.Antalek@va.gov>; DeVito, Shari <Shari.DeVito@va.gov>; Tipton, Haley J <Haley.Tipton@va.gov>; Cicero, Shannon <Shannon.Cicero@va.gov>; Bailey, Holly A. <Holly.Bailey@va.gov>
Cc: Price, Michael C. <Michael.Price1@va.gov>; Gillespie, Suzanne M. (she/her/hers) <Suzanne.Gillespie@va.gov>
Subject: RE: Missing PERFECTO2 Unit on 7B: Clinical Work Orders CWKD0030548 Approval Request

The O2 concentrator has been found is located in specialty clinic. It will be removed off of the clc inventory and added to the specialty clinic inventory.

Mike, Biomed can go to do the PM on this in Room 407-0014-cn

Kelly Greathouse
 Supervisory Inventory Management Specialist (NX)
 Office 585-393-8471
 Cell 585-282-8114
 Supply Chain Management
 Email: kelly.greathouse@va.gov

Parts/Services (1)	Verification Data	Tools	Related Knowledge	Clinical Work Order Tasks	Asset Metrics	Contract Coverage	Work Order SLA (5)	Related Work Orders (7)	Upcoming Maintenances (1)	Approvers (2)	Related OIT Incidents								
<div style="border: 1px solid #ccc; padding: 5px; margin-bottom: 5px;"> ≡ Approvers Search Approver Search </div> <div style="border: 1px solid #ccc; padding: 5px; margin-bottom: 5px;"> Approval for = CWKD0011912 </div> <div style="display: flex; justify-content: space-between; border: 1px solid #ccc; padding: 5px;"> <div style="font-size: 1.2em;">≡</div> <div style="font-size: 1.2em;">≡</div> <div style="font-size: 1.2em;">≡</div> <div style="font-size: 1.2em;">≡</div> <div style="font-size: 1.2em;">≡</div> </div> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 5%;">State</th> <th style="width: 5%;">Comments</th> <th style="width: 5%;">Created</th> </tr> </thead> <tbody> <tr> <td style="text-align: center;">● No Longer Required</td> <td></td> <td style="text-align: right;">09/20/2022 11:45:37</td> </tr> <tr> <td style="text-align: center;">● Rejected</td> <td>09/20/2022 12:10:42 - Christian Pitchera</td> <td style="text-align: right;">09/20/2022 11:45:38</td> </tr> </tbody> </table>											State	Comments	Created	● No Longer Required		09/20/2022 11:45:37	● Rejected	09/20/2022 12:10:42 - Christian Pitchera	09/20/2022 11:45:38
State	Comments	Created																	
● No Longer Required		09/20/2022 11:45:37																	
● Rejected	09/20/2022 12:10:42 - Christian Pitchera	09/20/2022 11:45:38																	

09/20/2022 12:10:42 - Christian Pitcheralle (VHAALNPITCHC) (Comments)
 ITEM WAS JUST SCANNED 9 1 22 IN LOCATION: D220A-1-AL

09/20/2022 12:10:39 - Christian Pitcheralle (VHAALNPITCHC) (Comments)
 ITEM WAS JUST SCANNED 9 1 22 IN LOCATION: D220A-1-AL

Supply Chain Dashboard

Could Not Locate Tab shows PM work where Approval response is pending.

HTM - Supply Chain - Could Not Locate - Pending Approval Response

Approval for	Asset	Asset Type	Approver	Approval	Created	Approval Notes	Short Description	Closed	Closed by	Last Inventory Date	Last Known Location	Last PM (Non-Deferred)	Comments
CWKD0238565	62518	INFUSION CONTROLLERS	Veronica Sanchez (VHACASSANCHV)	Requested	11/02/2023 14:45:45	Device could not be found by HTM Staff...	Not High Risk Preventive Maintenance for Model: ALARIS PC UNIT 8015 - Annual	11/02/2023 14:45:44	Hussein Badawi (VHAMORBadawH)	10/17/2023	012N-15H-CP	04/13/2022 16:30:44	

ROS Tab shows PM work where using service confirmed they also cannot find the device. The ROS process needs to be initiated.

Could Not Locate PMs - Confirmed/Approved - ROS Needed

Approval for	Asset	Asset Type	Approver	State	Created	Approval Notes	Comments	Short Description	Approved Date	Last Inventory Date	Last PM (Non-Deferred)	Last Known Location	Owning Department
CWKD0208309	78581	SCALES: PATIENT	Christopher Rumsey (VHAMORRumseC)	Approved	10/13/2023 12:55:07	Device could not be found by HTM Staff...		Not High Risk Preventive Maintenance for Model: SR555i - Annual	10/13/2023 13:23:14	05/01/2023	09/27/2022 14:05:15	137-18-CP	620-470-NURSING

Results of CMMS Workflow and Actionable Dashboard

33% of CNLs resolved in 6 months. This represents a vast improvement from previous processes.

HTM - CNL Resolved

This Dashboard Tab shows all Could Not Locate Requests that have been Resolved. Resolution is considered initiated Could Not Locate Requests that have resulted in either a Turned In Status, Lost or Stolen Status, Disposition Date Entry, or Resulted in a Completed PM. Use the Filter Navigator to Filter based on the Approval Creation Date Range.

HTM - Approval Created

Last 6 months

HTM - VISN 2 - Supply Chain - CNL Resolved - PM'd

521

HTM - VISN 2 - Supply Chain - CNL Resolved - Dispositioned

302

HTM - VISN 2 - Supply Chain - All CNL Resolved

811 total Approvals

Approval for	State	Approval	Approver	Asset	Asset Type	Status	Created	Last Inventory Date	Last PM (Non-Deferred)	Disposition Date
▶ State: Approved (58)										
▶ State: No Longer Required (727)										
▶ State: Rejected (6)										
▶ State: Requested (20)										

1 to 4 of 4

Results of CMMS Workflow and Actionable Dashboard

Significant reduction in Average Time to Disposition for every CNL PM WO that did not have a PM completed after deferral (Before implementation of actionable dashboard and approval workflow, disposition took around 1 year and now takes less than 3 months).

Year	Count CNL Last PM & Dispositioned	Average Time to Disposition (Years)
2023	124	0.24
2022*	137	0.59
2021	139	0.96
2020	210	0.72
2019	98	1.53

*Implementation of Actionable Dashboard occurred (9/2022)

Preventive Maintenance Quality

Home Page Missing PM Wrong PM Missing Schedule Missing Start Def/Instance Mismatch PM Generation Issue Multiple Active PMs Continuous Readiness Deactivated PMs

Information

This dashboard has been set up to allow for the correction of Maintenance Definition and Instance Issues in Nuvo.

Filters are dynamic to the user based on write access to Nuvo.

All Tabs are filtered to In Use/Out of Service devices only.

See the following summaries by tab below:

- Missing PM Tab –
 - Devices that have no upcoming PM, per the "Next Scheduled Maintenance" field on the device table, but a PM is likely required per current OEM PM frequency listings on the Asset Model table. Excludes devices that have a maintenance instance listed as AEM.
- Wrong PM Tab –
 - Devices with a PM schedule that does not match current OEM PM frequency listings on the Asset Model table, and "Alternate Frequency Authorized" is listed as No, meaning the listing suggests only the OEM PM frequency should be utilized. Excludes devices that have a maintenance instance listed as AEM.
- Missing Schedule Tab –
 - Devices that have no upcoming PM, per the "Next Scheduled Maintenance" field on the device table, but have an active maintenance instance missing "Schedule Frequency", suggesting the missing schedule issue should be corrected. Excludes devices with maintenance listed as "NO PM"
- Missing Start Month Tab –
 - Devices that have no upcoming PM, per the "Next Scheduled Maintenance" field on the device table, with an active maintenance instance missing "Start Month", suggesting the missing start month issue should be corrected. Excludes devices with maintenance listed as "NO PM"

Devices Missing PM Schedule

FY24: Q1
502
Change: ▼ 30 (-5.6%)

Devices with Wrong PM Schedule

Q1 FY2024
204

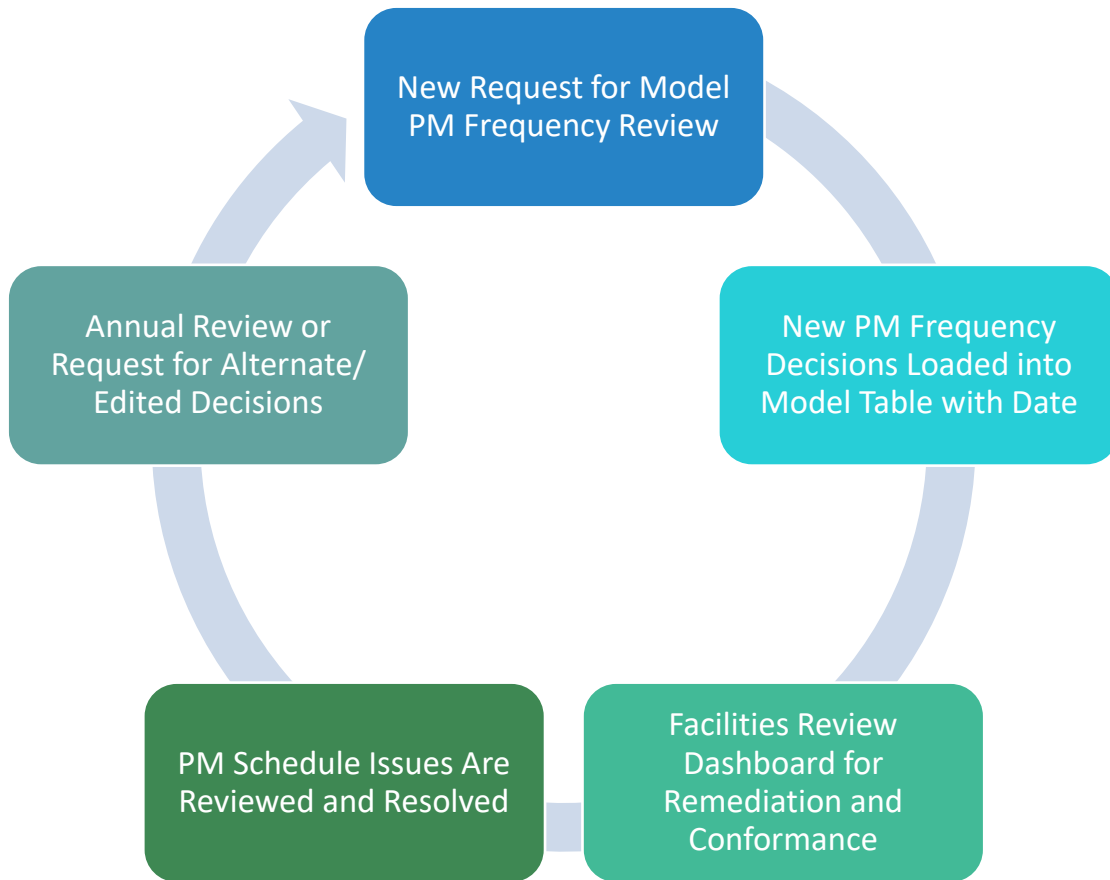
Devices w/ No Recent PM Completion

FY24: Q1
943

Actionable Devices "Missing" PM (Combined Measure)

Q1 FY2024
15
Change: ▼ 67 (-81.7%)

PM Quality – Intake Request Process



- New Fields added to Device Model Table
 - OEM PM Frequency
 - Alternate Frequency Authorized?
 - OEM Last Review Date
- OEM Intake and Review Process
 - Automate and Simplify an Existing Process
 - Fosters Benefits across Facilities and Conformance.
 - Time Savings from Shared Operationalized Workflow
- Continuous Improvement
 - Dashboard to conform PM schedules to decisions.
 - Request new intake or review of existing decisions.

OEM Frequency Intake ☆				
Requested Item (Asset Type/Manufacturer/Model) ▾	Requesting Facility ▾	Intake Type ▾	OEM Model ... ▾	OEM Recommendation ▾
MONITORS: PHYSIO: TELEMETRIC/PHILIPS/MX40	Northport	Review Decision	Intellivue MX40	Primary - Annual, Northport - None

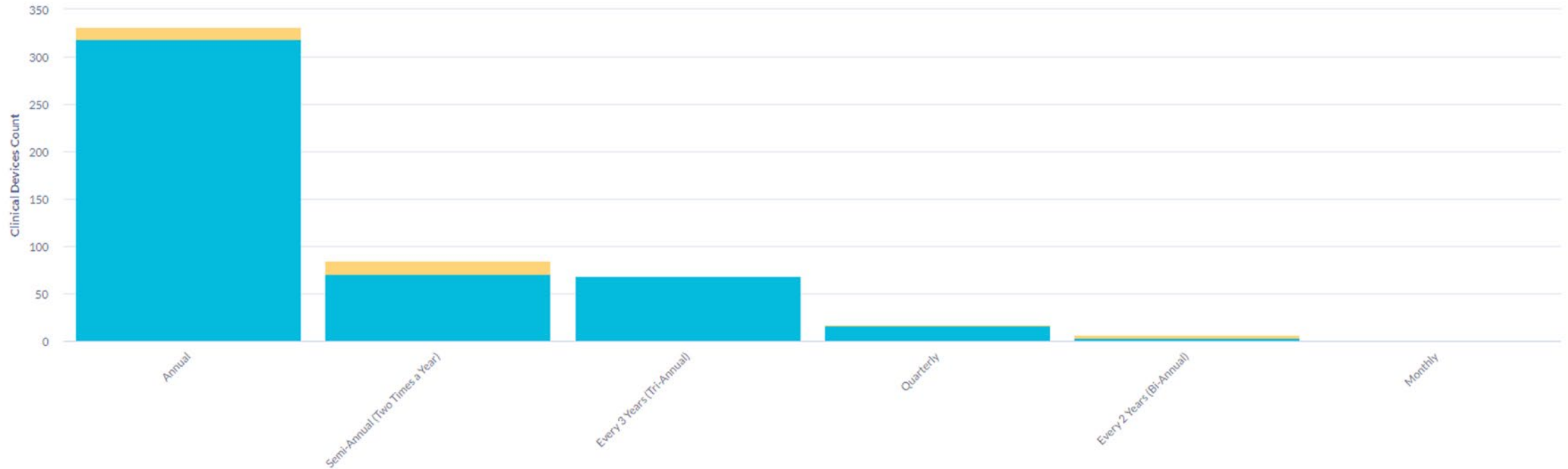
PM Quality – Missing PM Schedule

Home Page **Missing PM** Wrong PM Missing Schedule Missing Start Def/Instance Mismatch PM Generation Issue Multiple Active PMs Continuous Readiness Deactivated PMs

Devices Missing PMs - Information

The report below shows devices that require a PM per OEM Frequency Decisions, but no Upcoming PM is scheduled to generate for that device. These devices are validated against OEM frequency decisions, and exclude devices that have a maintenance instance listed as an AEM. Please reach out to the dashboard owner to make a request to update an OEM PM Frequency Decision. Click here to see an updated list: [OEM Maintenance Decisions](#)

HTM - Devices with OEM PM Frequency Matches but No Active Upcoming PM



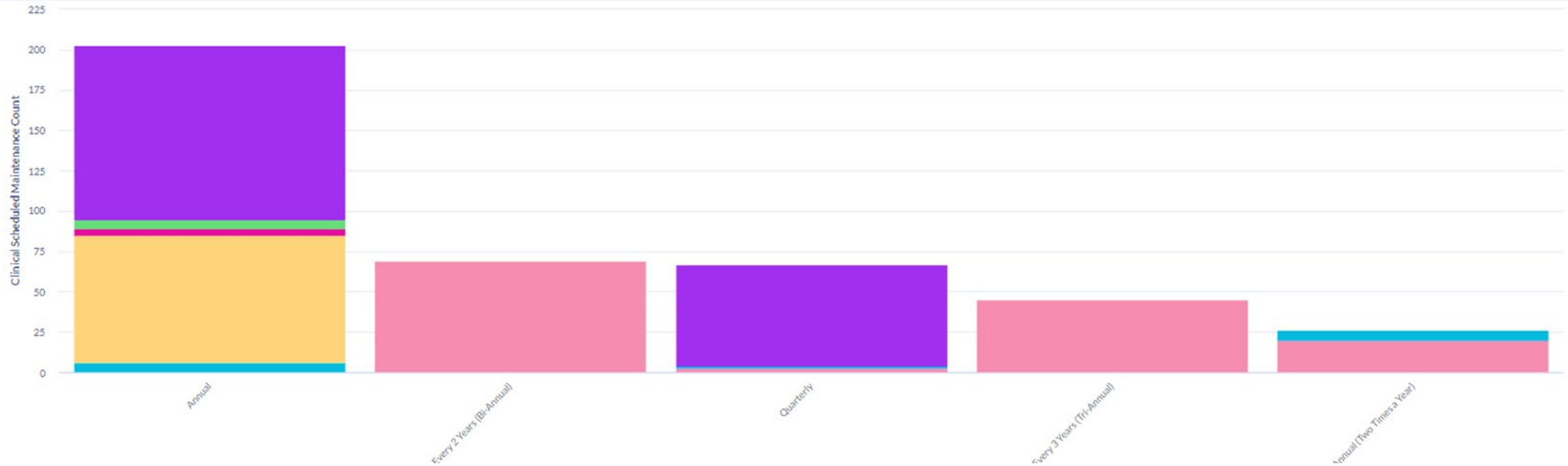
PM Quality – Wrong PM Schedule

Home Page | Missing PM | **Wrong PM** | Missing Schedule | Missing Start | Def/Instance Mismatch | PM Generation Issue | Multiple Active PMs | Continuous Readiness | Deactivated PMs

Devices with PMs that do not match OEM PM Frequency

The report below shows maintenance instances for devices that require a PM per OEM Frequency Decisions, but the PM schedule does not match the OEM Frequency Decision. These devices are validated against OEM frequency decisions, and exclude devices that have a maintenance instance listed as an AEM. Filters where alternate PM Freq authorized. Please reach out to the dashboard owner to make a request to update an OEM PM Frequency Decision. Changes may be best done in the definition, and follow up PMs may be needed when making changes. [Click here to see an updated list: OEM Maintenance Decisions.](#)

HTM - Devices with PM Frequencies that do not match OEM PM Frequency



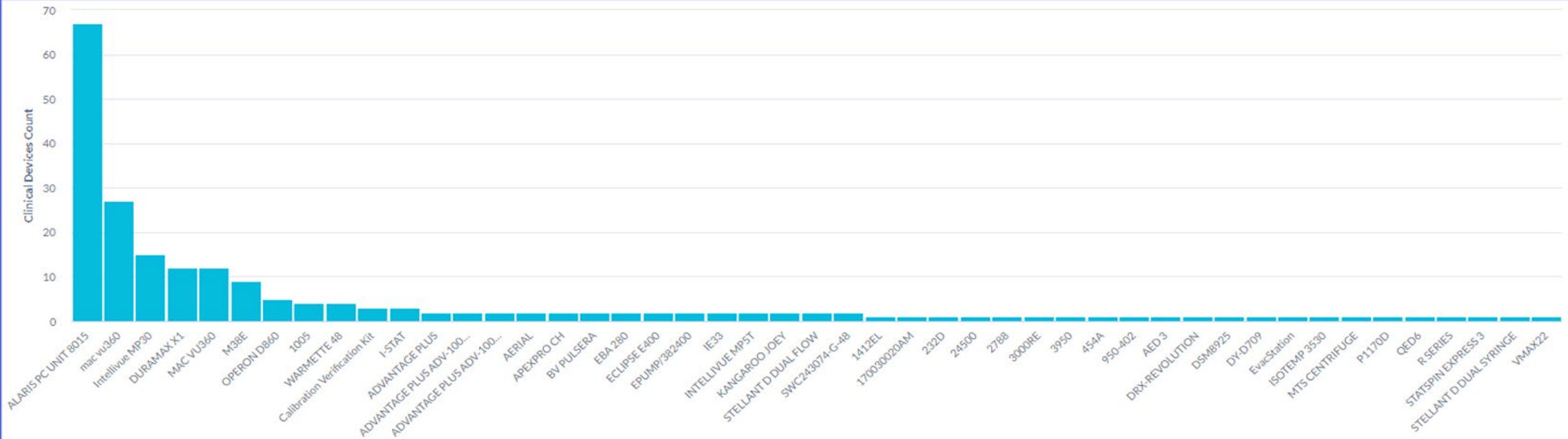
PM Quality – Duplicate PM Generation

Home Page Missing PM Wrong PM Missing Schedule Missing Start Def/Instance Mismatch PM Generation Issue **Multiple Active PMs** Continuous Readiness Deactivated PMs

HTM Assets with Multiple Active PMs

HTM should confirm the need for multiple frequencies. OEM PM Frequencies where Alternate Frequencies have been indicated as authorized have been filtered out. These devices are validated against OEM frequency decisions, and excludes maintenance listed as an AEM. Please reach out to the dashboard owner to make a request to update an OEM PM Frequency Decision. Click here to see an updated list: [OEM Maintenance Decisions](#)

HTM - Assets with Two or More Active PMs Generating



PM Quality – No “Recent” Passed PM

Home Page Missing PM Wrong PM Missing Schedule Missing Start Def/Instance Mismatch PM Generation Issue Multiple Active PMs **Continuous Readiness** Deactivated PMs

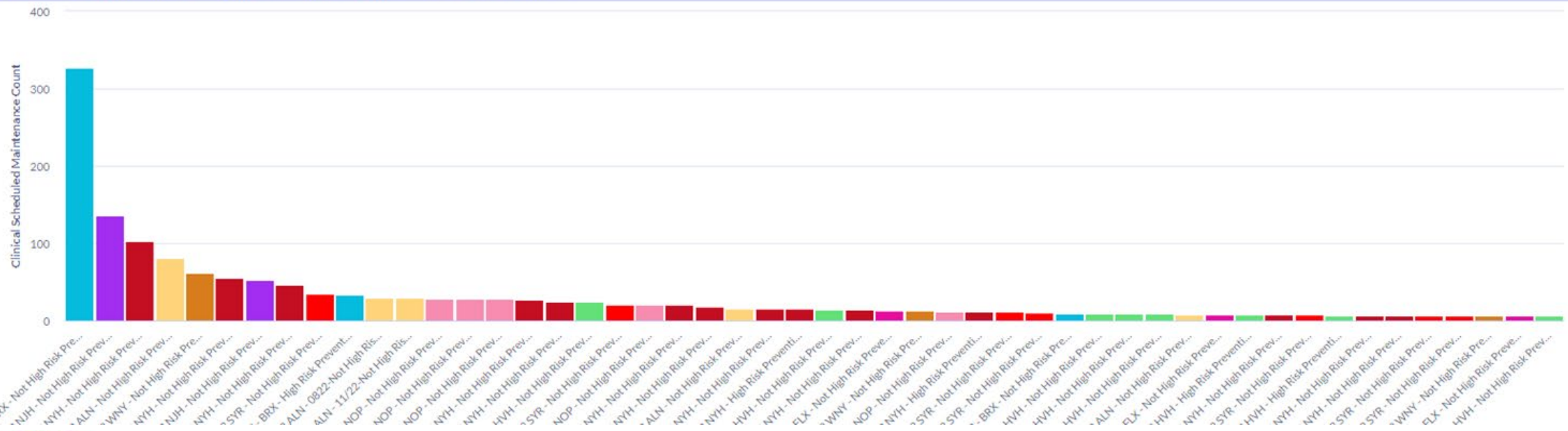
HTM PM Continuous Readiness

The reports on this tab are dependent on the "Last PM (Non-Deferred)" and "Next Scheduled Maintenance" fields on the device table in Nuvolo. Some new sites may have historical PM work orders completed that will not populate the "Last PM (Non-Deferred)" field on the device table until work history is documented in Nuvolo for that asset.

The top report shows devices on an active PM schedule, but have a "Last PM (Non-Deferred)" that is over two years ago, suggesting a recent PM has not been completed on that device. Excludes maintenance instances containing the words "NO PM" in their name, and devices with frequencies greater than annual. Excludes device with an active PM generated from a maintenance instance in Nuvolo.

The bottom report shows devices with PM history - suggesting they should be on PM - but have had no PMs created in the last 12 months.

HTM - Assets on PM with No Recent "Last PM (Non-Deferred)" - Continuous Readiness



Preventive Maintenance Results

Devices Missing PM Schedule

FY24: Q1
502 Change: ▼ 30 (-5.6%)

Devices w/ No Recent PM Completion

FY24: Q1
943

Devices W/ No Recent PM Completion Information

Devices with No Recent PM Completion is a quarterly calculation from the device table, showing HTM supported devices not "Turned In", with conditions:

- Next Scheduled Maintenance is not empty, and not this quarter (Active PM Generating)
- Last PM (Non-Deferred) is empty or greater than **3 Years Ago!**
- Excludes devices with known OEM PM Frequency of Every 3 Years (Tri-Annual)
- Purchased/Created greater than 12 months ago (excludes new assets)

Devices with Wrong PM Schedule

Q1 FY2024
204

Actionable Devices "Missing" PM (Combined Measure)

Q1 FY2024
15 Change: ▼ 67 (-81.7%)

Actionable Devices "Missing" PM (Combined Measure) Information

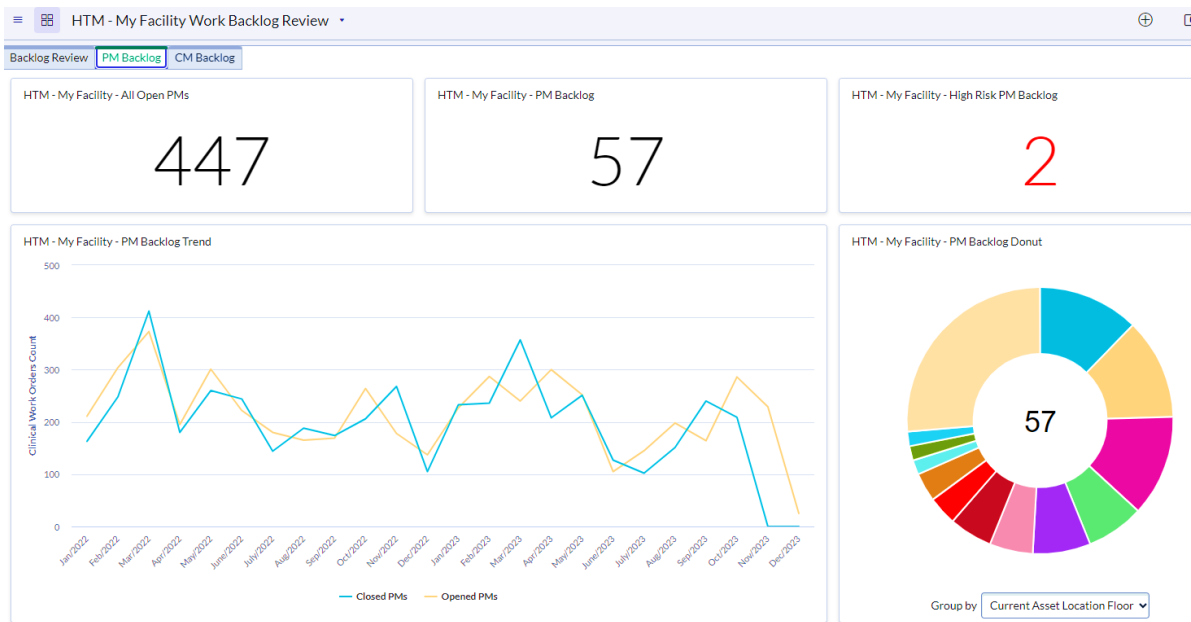
Actionable Devices "Missing" PM is shows devices with Last PM (Non-Deferred) greater than 12 months ago and one of the following:

- Device Last Inventory Date is this quarter (Device Inventory Scan)
- Deferred, Could Not Locate Approval Request Rejected (Device Flagged as Found)
- Deferred, In Use Approval Request Rejected (Device Flagged as Available)
- Deferred, Could Not Locate on a device flagged as Stationary Equipment Category

☆ Name	Oct 2022	Nov 2022	Dec 2022	Jan 2023	Feb 2023	Mar 2023	Apr 2023	May 2023	Jun 2023	Jul 2023	Aug 2023	Sep 2023	Oct 2023	Target	Trend
★ Scheduled High Risk PMs > Facility = Albany, NY	14	18	22	0	2	26	5	46	4	19	2	13	17		
☆ Closed On Time High Risk PMs > Facility = Albany, NY	14	18	22	0	2	26	5	46	4	19	2	13	13		
☆ ● PM High Risk % Closed on Time > Facility = Albany, NY	100.0%	100.0%	100.0%		100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	76.5%	100.0%	
★ Scheduled Non High Risk PMs > Facility = Albany, NY	131	203	144	154	50	330	148	260	165	142	142	158	153		
★ Closed On Time Non High Risk PMs > Facility = Albany, NY	131	203	143	154	50	330	148	258	165	141	141	157	108		
★ ● PM Non High Risk % Closed on Time > Facility = Albany, NY	100.0%	100.0%	99.3%	100.0%	100.0%	100.0%	100.0%	99.2%	100.0%	99.3%	99.3%	99.4%	70.6%	100.0%	
★ CNL % > Facility = Albany, NY	8.97%	0.45%	1.81%	7.14%	0.00%	17.70%	7.19%	3.92%	4.73%	0.62%	6.94%	2.34%	2.94%		
★ In Use % > Facility = Albany, NY	0.00%	0.45%	1.81%	0.00%	0.00%	1.69%	0.65%	0.00%	1.78%	0.00%	0.69%	7.60%	0.00%		
☆ % HR PMs - CNL or IU > Facility = Albany, NY	0.00%	0.00%	0.00%		0.00%	0.00%	0.00%	0.00%	0.00%	5.26%	0.00%	0.00%	0.00%		

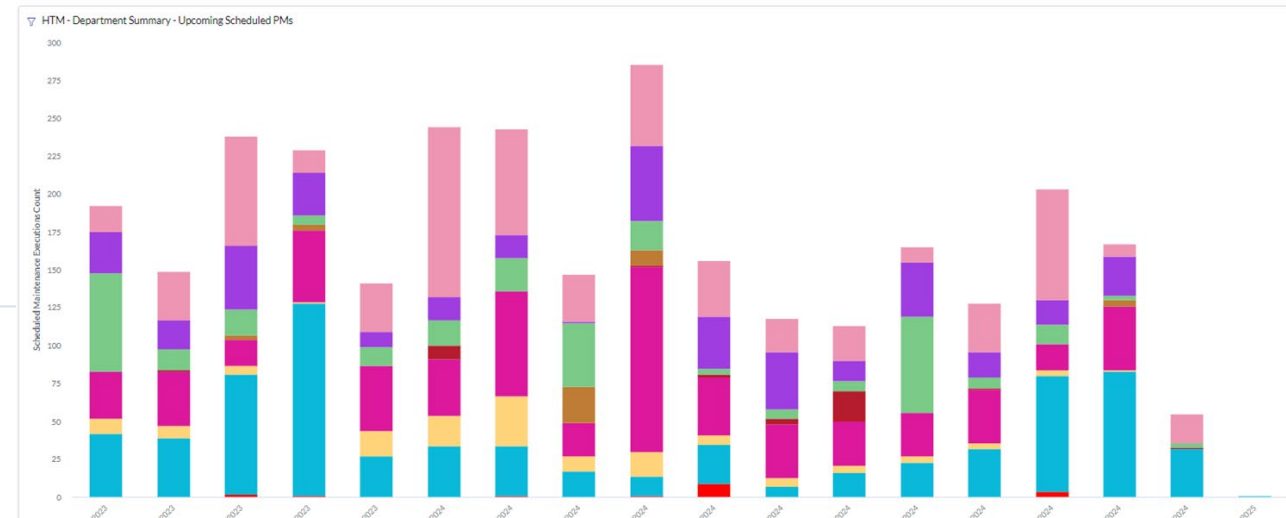
Results Collected October 2023 – Real Time Data for Current Month Not Final

Preventive Maintenance Planning

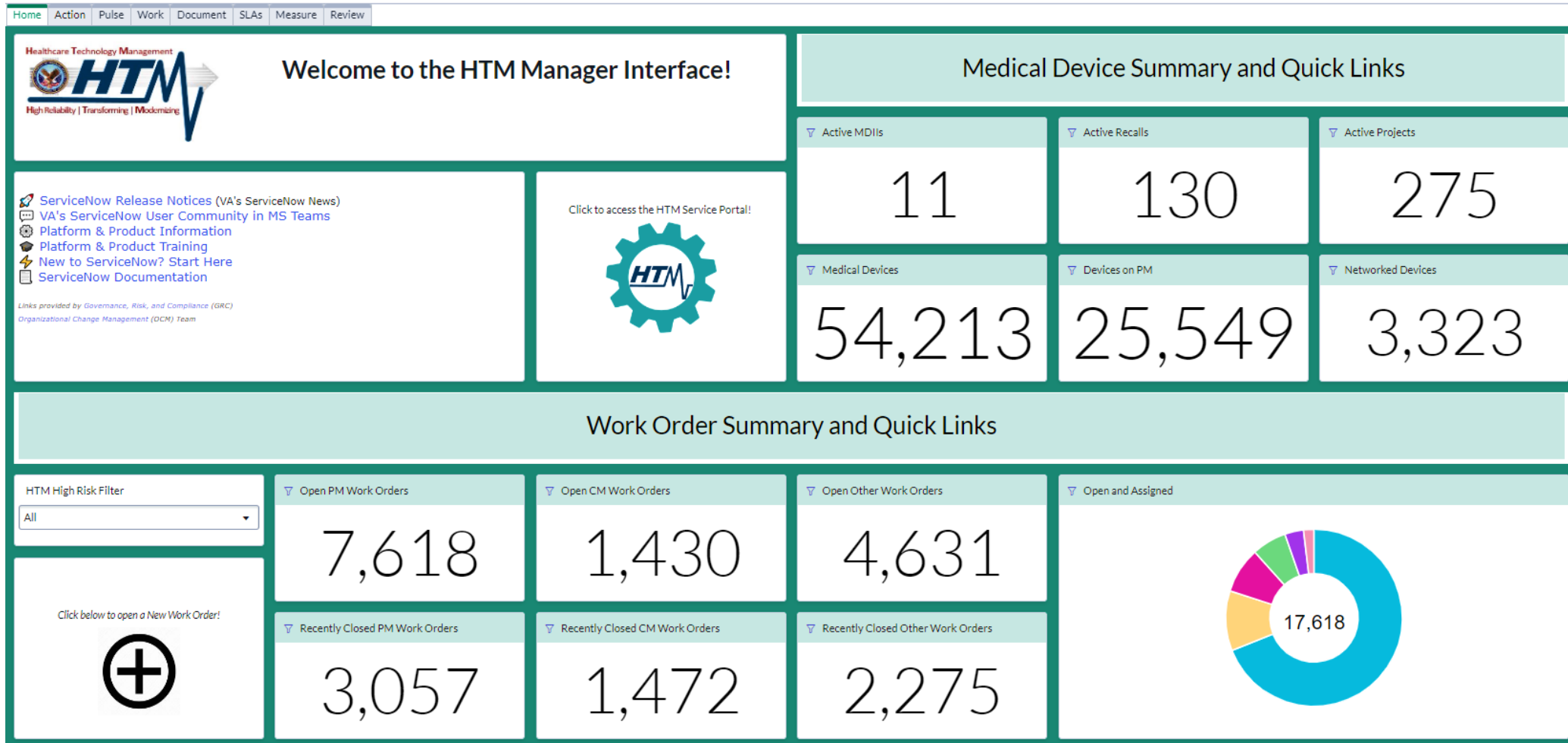


Backlog Review and Resourcing

PM Workload Balancing and Planning



Overall Status – Manager/User Interfaces



Quality – Getting Input from the Frontline

Reporting Intake Process

Microsoft Lists

Healthcare Technology Management – HTM
V2 Nuvolo Report Intake

Request Title	Requestor	Request Type	Intended Audience	Description
Linking EE# to Contract FSE contact info an...	Kowtha, Srikanth	General Idea	All HTM	I would like to be able to link contact info for field service engineers or customer support directly to the EE#.
Contract renewal action planning report	Kowtha, Srikanth	New Report	Program Manager	I would like a report that, based on the year of the contract, gives us a 90 day warning for option year renewals
Tracking Invoices in contract module	Kowtha, Srikanth	General Idea	Program Manager	Requesting a way to properly track submitted and approved invoices against contract POs. I'd also like to see a way to note items like pending modifications
Morning Report	Bozogian, Richard A.	New Report	Supervisory	I need a report to give info to medical center director every morning. See attached slide

SharePoint

V2 HTM Nuvolo Reporting Workgroup

Home

Conversations

Documents

Notebook

Pages

Reporting Tracker

PA Tracking

EOC FY23 Measures

EBERS Metrics

Site contents

+ New

Page details

Analytics

News

+ Add

Month	Corrective Maintenance	Cyber	Other	Preventive Maintenance
Aug 2021	181	118	5	0
Sep 2021	143	95	0	0
Oct 2021	333	113	0	0
Nov 2021	274	153	48	0

Activity

Welcome To V2 HTM Nuvolo Reporting Workgroup

How do you get started? Look around, check out the report tracker for requested and completed reports,...

Gucciardi, Joseph S. April 29, 2022

See all

Reporting Workgroup and Stakeholder Input

Questions & Discussions

Enter your
questions
to the Q&A
window

Thank You



Please complete the online evaluation form at
<https://www.surveymonkey.com/r/2023-2024-3>

or scan the QR code

