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
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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.
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.
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

Barbara Maguire, MBA, CCE, FACCE

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 Solutions’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).
Introduction

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

1 Year 2 Year 3 Year Cumulative Total

- Full Service Contract
- PM Only Contract
- T&M
- In House w/ Training

Cumulative Total:

- Full Service Contract: $10,000 - $100,000
- PM Only Contract: $10,000 - $100,000
- T&M: $10,000 - $100,000
- In House w/ Training: $10,000 - $100,000
Technicians developed dashboards to improve visibility of monthly workload.
Work Balancing YTD
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
Assets Past Due for Replacement by CM Count
CMMS Automatic Workflow-CNL PMs

PM WO closed as Deferred, Could Not Locate

CMMS routes approval request to Device Owner and stakeholders monitor request status with live dashboard

CMMS generates Follow Up PM

Deferred PM is addressed

Device Owner and Supply Chain initiate Lost Device Investigation

Approve

Equipment is Found

Equipment is Lost or Stolen

Reject
CMMS Automatic Workflow

The O2 concentrator has been found and is located in specialty clinic. It will be removed off the dc 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 (NS)
Office 585-373-8471
Cell 585-282-8114
Supply Chain Management
Email: kelly.greathouse@va.gov
Supply Chain Dashboard

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

ROS Tab shows PM work where using service confirmed they also cannot find the device. The ROS process needs to be initiated.
33% of CNLs resolved in 6 months. This represents a vast improvement from previous processes.
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).

<table>
<thead>
<tr>
<th>Year</th>
<th>Count CNL Last PM &amp; Dispositioned</th>
<th>Average Time to Disposition (Years)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2023</td>
<td>124</td>
<td>0.24</td>
</tr>
<tr>
<td>2022*</td>
<td>137</td>
<td>0.59</td>
</tr>
<tr>
<td>2021</td>
<td>139</td>
<td>0.96</td>
</tr>
<tr>
<td>2020</td>
<td>210</td>
<td>0.72</td>
</tr>
<tr>
<td>2019</td>
<td>98</td>
<td>1.53</td>
</tr>
</tbody>
</table>

*Implementation of Actionable Dashboard occurred (9/2022)
Preventive Maintenance Quality

Information
This dashboard has been set up to allow for the correction of Maintenance Definition and Instance Issues in Nuvolo. Filters are dynamic to the user based on write access to Nuvolo. 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".

 FY24: Q1
 Devices Missing PM Schedule: 502
 Change: +30 (+5.6%)  
 Devices with Wrong PM Schedule: 204
 FY24: Q1
 Devices w/ No Recent PM Completion: 943
 FY24: Q1
 Actionable Devices "Missing" PM (Combined Measure): 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

<table>
<thead>
<tr>
<th>Requested Item (Asset Type/Manufactures/Model)</th>
<th>Requesting Facility</th>
<th>Intake Type</th>
<th>OEM Model...</th>
<th>OEM Recommendation</th>
</tr>
</thead>
<tbody>
<tr>
<td>MONITORS: PHYSID, TELEMETRIC, PHILIPS/MX40</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Northport</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Review Decision

Intellicare MX40
Primary: Annual, Northport: None
PM Quality – Missing PM Schedule

Device 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

- Annual
- Semi-Annual (4 times year)
- Every 2 Years (1/2 Annual)
- Quarterly
- Every 2 Years (3/2 Annual)
- Monthly
PM Quality – Wrong PM Schedule

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 OEM. Filters where alternate PMFreq 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.
PM Quality – Duplicate PM Generation

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

Clinical Device Count

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PM Quality – No “Recent” Passed PM

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.
# Preventive Maintenance Results

<table>
<thead>
<tr>
<th>Devices Missing PM Schedule</th>
<th>Devices w/ No Recent PM Completion</th>
<th>Devices w/ No Recent PM Completion Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>FY24: Q1</td>
<td>FY24: Q1</td>
<td></td>
</tr>
<tr>
<td>502</td>
<td>943</td>
<td></td>
</tr>
<tr>
<td>Change: ▼ 30 (-5.6%)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Devices with Wrong PM Schedule</th>
<th>Actionable Devices “Missing” PM (Combined Measure)</th>
<th>Actionable Devices “Missing” PM (Combined Measure) Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>Q1 FY2024</td>
<td>Q1 FY2024</td>
<td></td>
</tr>
<tr>
<td>204</td>
<td>15</td>
<td></td>
</tr>
<tr>
<td>Change: ▼ 67 (-81.7%)</td>
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<td></td>
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</tbody>
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<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Scheduled High Risk PMs &gt; Facility = Albany, NY</td>
<td>14</td>
<td>18</td>
<td>22</td>
<td>0</td>
<td>2</td>
<td>26</td>
<td>5</td>
<td>46</td>
<td>4</td>
<td>19</td>
<td>2</td>
<td>13</td>
<td>17</td>
<td></td>
</tr>
<tr>
<td>Closed On Time High Risk PMs &gt; Facility = Albany, NY</td>
<td>14</td>
<td>18</td>
<td>22</td>
<td>0</td>
<td>2</td>
<td>26</td>
<td>5</td>
<td>46</td>
<td>4</td>
<td>19</td>
<td>2</td>
<td>13</td>
<td>13</td>
<td></td>
</tr>
<tr>
<td>PM High Risk % Closed on Time &gt; Facility = Albany, NY</td>
<td>100.0%</td>
<td>100.0%</td>
<td>100.0%</td>
<td>100.0%</td>
<td>100.0%</td>
<td>100.0%</td>
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<td>100.0%</td>
<td>100.0%</td>
<td>100.0%</td>
<td>100.0%</td>
<td>76.5%</td>
<td>100.0%</td>
</tr>
<tr>
<td>Scheduled Non High Risk PMs &gt; Facility = Albany, NY</td>
<td>121</td>
<td>203</td>
<td>144</td>
<td>154</td>
<td>50</td>
<td>330</td>
<td>148</td>
<td>260</td>
<td>165</td>
<td>142</td>
<td>142</td>
<td>158</td>
<td>153</td>
<td></td>
</tr>
<tr>
<td>Closed On Time Non High Risk PMs &gt; Facility = Albany, NY</td>
<td>131</td>
<td>203</td>
<td>143</td>
<td>154</td>
<td>50</td>
<td>330</td>
<td>148</td>
<td>258</td>
<td>165</td>
<td>141</td>
<td>141</td>
<td>157</td>
<td>108</td>
<td></td>
</tr>
<tr>
<td>PM Non High Risk % Closed on Time &gt; Facility = Albany, NY</td>
<td>100.0%</td>
<td>100.0%</td>
<td>99.3%</td>
<td>100.0%</td>
<td>100.0%</td>
<td>100.0%</td>
<td>100.0%</td>
<td>99.2%</td>
<td>100.0%</td>
<td>99.3%</td>
<td>99.3%</td>
<td>99.4%</td>
<td>70.6%</td>
<td>100.0%</td>
</tr>
<tr>
<td>CNL % &gt; Facility = Albany, NY</td>
<td>897%</td>
<td>4.65%</td>
<td>1.81%</td>
<td>7.14%</td>
<td>0.00%</td>
<td>17.70%</td>
<td>7.19%</td>
<td>3.92%</td>
<td>4.73%</td>
<td>0.62%</td>
<td>6.94%</td>
<td>2.34%</td>
<td>2.94%</td>
<td></td>
</tr>
<tr>
<td>In Use % &gt; Facility = Albany, NY</td>
<td>0.00%</td>
<td>0.45%</td>
<td>1.81%</td>
<td>0.00%</td>
<td>0.00%</td>
<td>1.69%</td>
<td>0.65%</td>
<td>0.00%</td>
<td>1.78%</td>
<td>0.00%</td>
<td>0.69%</td>
<td>7.60%</td>
<td>0.00%</td>
<td></td>
</tr>
<tr>
<td>% HR PMs - CNL or IU &gt; Facility = Albany, NY</td>
<td>0.00%</td>
<td>0.00%</td>
<td>0.00%</td>
<td>0.00%</td>
<td>0.00%</td>
<td>0.00%</td>
<td>0.00%</td>
<td>0.00%</td>
<td>0.00%</td>
<td>5.26%</td>
<td>0.00%</td>
<td>0.00%</td>
<td>0.00%</td>
<td></td>
</tr>
</tbody>
</table>

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

Welcome to the HTM Manager Interface!

Medical Device Summary and Quick Links

<table>
<thead>
<tr>
<th>Active MDIs</th>
<th>Active Recalls</th>
<th>Active Projects</th>
</tr>
</thead>
<tbody>
<tr>
<td>11</td>
<td>130</td>
<td>275</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Medical Devices</th>
<th>Devices on PM</th>
<th>Networked Devices</th>
</tr>
</thead>
<tbody>
<tr>
<td>54,213</td>
<td>25,549</td>
<td>3,323</td>
</tr>
</tbody>
</table>

Work Order Summary and Quick Links

<table>
<thead>
<tr>
<th>Open PM Work Orders</th>
<th>Open CM Work Orders</th>
<th>Open Other Work Orders</th>
<th>Open and Assigned</th>
</tr>
</thead>
<tbody>
<tr>
<td>7,618</td>
<td>1,430</td>
<td>4,631</td>
<td>17,618</td>
</tr>
</tbody>
</table>

Recently Closed PM Work Orders
- 3,057

Recently Closed CM Work Orders
- 1,472

Recently Closed Other Work Orders
- 2,275
Quality – Getting Input from the Frontline

Reporting Intake Process

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