

2024-2025 Educational Webinar Series

Varying Reporting Structures of HTM/CE Departments

December 12, 2024

Panelists

Michael Fraai, MS

Perry Kirwan, MEng

Ilir Kullolli, MS

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2024-2025 Educational Webinar series by



About the Moderator



Carolyn Mahoney, CCE, CHTM
Sigma Health Consulting

Carolyn started working for the Department of Veteran's Affairs (VA) after graduating from Worcester Polytechnic Institute (WPI) with her master's in engineering. She worked for several different VAs including Seattle, WA and Ann Arbor, MI. Before spending most of her career in the New England Healthcare system. Carolyn worked for the VA for over 31 years before retiring in 2023. During her long career with the VA, she worked to strengthen the regional clinical engineering program by developing a process for consistent department reviews, standardizing equipment requesting and procurement tracking and working closely with sites to improve key performance measures.

She joined Sigma Health Consulting shortly after retiring. There she still works closely with the VA assisting with standardized technical specification and planned maintenance procedures. She enjoys working with the Sigma team and continuing to assist the VA.

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.

Session Description

In this panel discussion, we will explore the various structures used for facility's Health Technology Management (HTM) and Clinical Engineering (CE) organizations. The panel will delve into how these structures have evolved over recent years, highlighting both its advantages and disadvantages. The discussion will also cover how these varying structures impact communication and escalation processes within the organization.

Additionally, the panel will discuss how the current reporting framework supports upward mobility and career advancement for the organization's professionals.

Join us as we discuss this critical aspect of HTM and CE management and develop a deeper understanding of the differences in Organizations operations.

About the Speaker



Michael Fraai, MS

Executive Director, Biomedical Engineering & Device Integration.



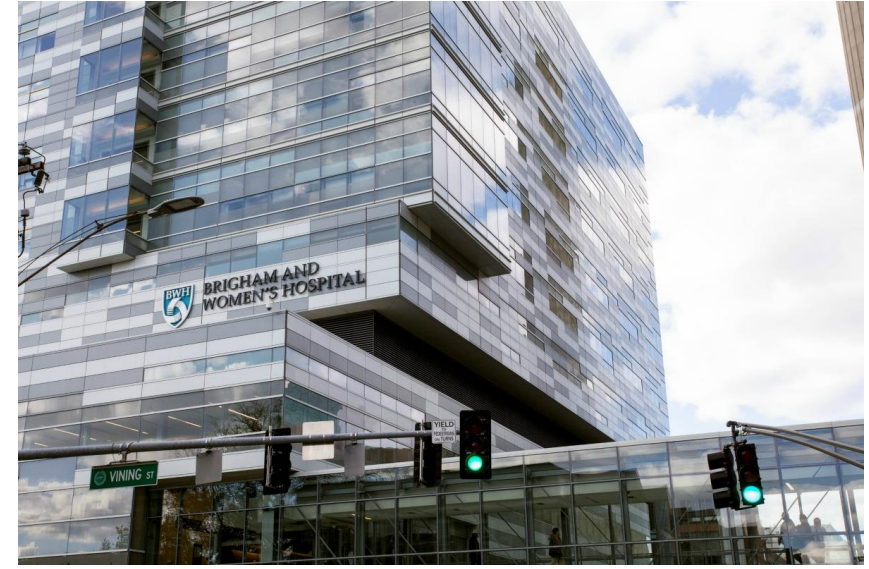
Michael, a native of Curaçao, has an Undergraduate Degree in Biomedical Engineering from Tulane University in New Orleans, and a Graduate Degree from the Hartford Graduate Center/RPI in CT.

Michael joined the Brigham and Women's Hospital in 1994 as a Clinical Engineer. In 1997 he was promoted to Assistant Director of Biomedical Engineering, and then in 2002 he was offered the role of Director.

Most recently in 2021, Michael was promoted to the position of Executive Director of Biomedical Engineering & Device Integration. In his role, he focuses on strategic & innovative use of technology to match the current clinical practice model in the hospital. He is also responsible for implementing a hospital-wide telemetry system, a patient care network of 1000+ devices and an asset tracking system for patient care technology.

Michael and his team maintain an inventory of 29,000+ patient care devices covering the Brigham Health and its 35 offsite locations.

About Brigham and Women's Hospital (BWH)



- Nearly **1,000 inpatient beds**, including:
 - **146 ICU bed**
 - **489 Telemetry beds**
- **43 operating rooms**
- **39 ambulatory locations** across Greater Boston and the Route 3 corridor
- Biomedical Device Integration (BMDI) fully integrated into the EHR system
- **A patient care network of ~1,600 devices**
- Brigham and Women's Hospital Biomedical Engineering supports over **41,000 patient care devices**
- Integrated approach: **One Patient, One Record, One Bill**

Mass General Brigham operates the largest academic Home Hospital

1

Unified MGB Home Hospital service



75%

Of eligible patients are in our serviceable area



5

Days on average spent in Home Hospital

5

MGB Hospitals with Home Hospital services
MGH, BWH, BWFH, NWH, and SLM

72

Neighborhoods served across Greater Boston



4,000+

Home Hospital Admissions Since Jan. 2022



70+

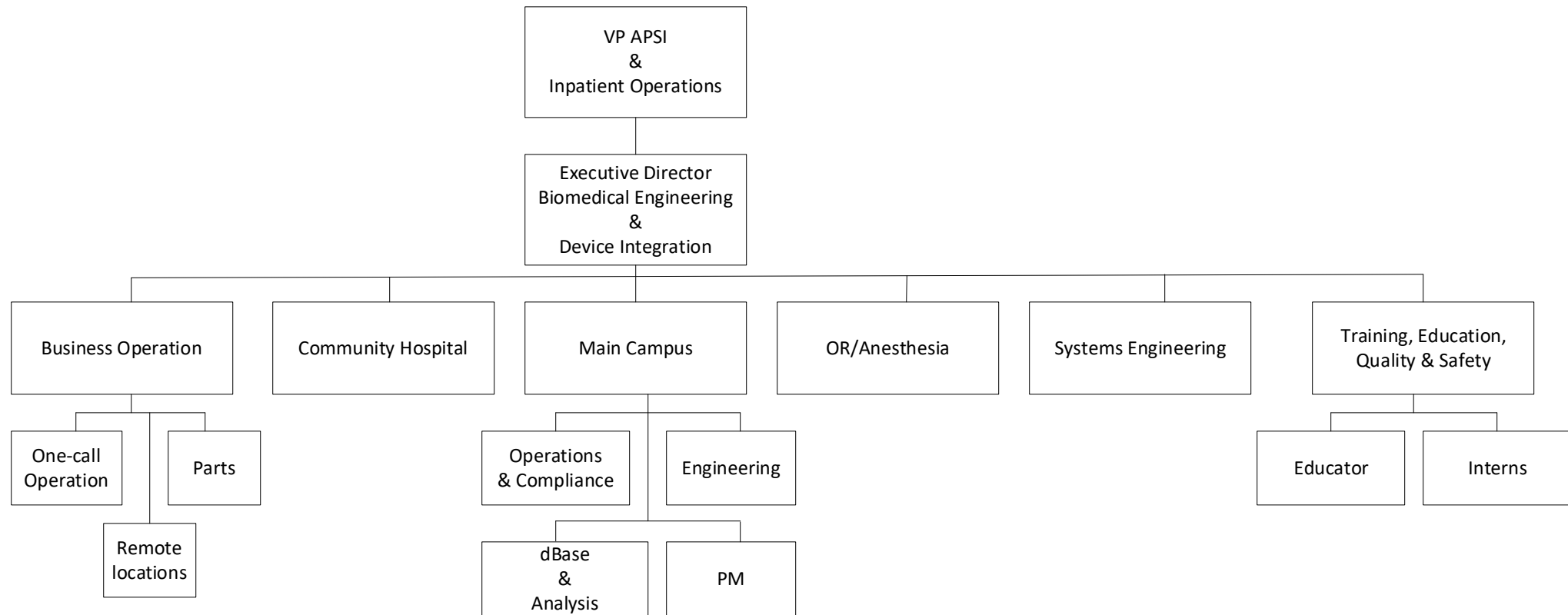
Current Home Hospital Bed Capacity



20,000+

Acute Care Facility-Based Bed Days Saved Since Jan. 2022

Brigham and Women's Hospital Organization Chart



67 FTEs
 1 AMC
 1 Community Hospital
 1 Rehabilitation Hospital
 1 Mental Hospital
 39 Remote locations
 Home Hospital

BWH HTM/CE Org Structure: A Journey Through the Years

14 Years	~6 Years	~9 Years	2 Years...
Engineering & Patient Safety Budget Awareness	Standards Process and Business Oriented	Quality and Clinically Driven	Financially Driven
Priority	Priority	Priority	Priority
Engineering and patient safety	Process and standards	Clinically driven	Budget conscious
Clinically driven	Business Oriented	Quality	Consistent Process
Budget conscious			

Utilize engineering principles to address complex patient care technology challenges while demonstrating cost-effectiveness for the institution.

About the Speaker



Ilir Kullolli, MS

VP and COO, Digital Information Solutions

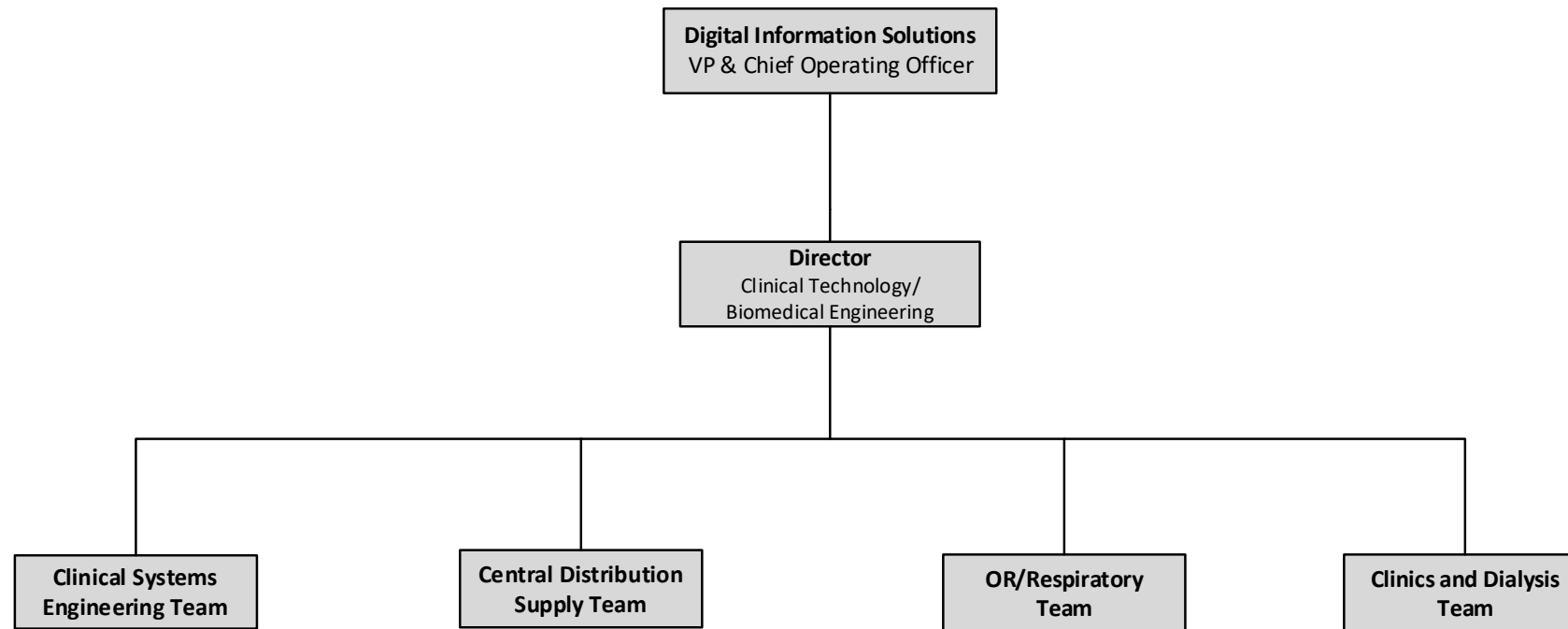


Ilir Kullolli is VP and COO for Digital Information Solutions at Stanford Medicine Children's Health. Before Stanford, Ilir worked for Kaiser Permanente Clinical Technology, where he was the Regional Director of Clinical Systems Engineering in Northern California. Ilir has also held leadership positions in Biomedical Engineering for Brigham and Women's Hospital (Partners Healthcare) in Boston, MA and Middlesex Hospital in Middletown, CT.

Before making the switch to Biomedical Engineering, Ilir worked in Information Technology as Technical Consultant and Project Manager for South End Consulting in Boston. Ilir holds a master's degree in Biomedical Engineering from University of Connecticut and a bachelor's degree in Computer Engineering from Wentworth Institute of Technology in Boston.

Stanford Medicine Children's Health HTM/CE reporting Structure

Clinical Technology and Biomedical Engineering



Clinical Technology & Biomedical Engineering (CTBE) Quick Facts



20,000+ medical devices - ultrasound, x-ray, DR, patient monitoring, Cath Lab, IR, dialysis & OR



20+ integrated systems - ECG management, infusion pump system, digital OR, cardiology PACS, EEG/EMG



24x7 on-site support (hospital)



Medical devices aligned with **Cybersecurity** needs



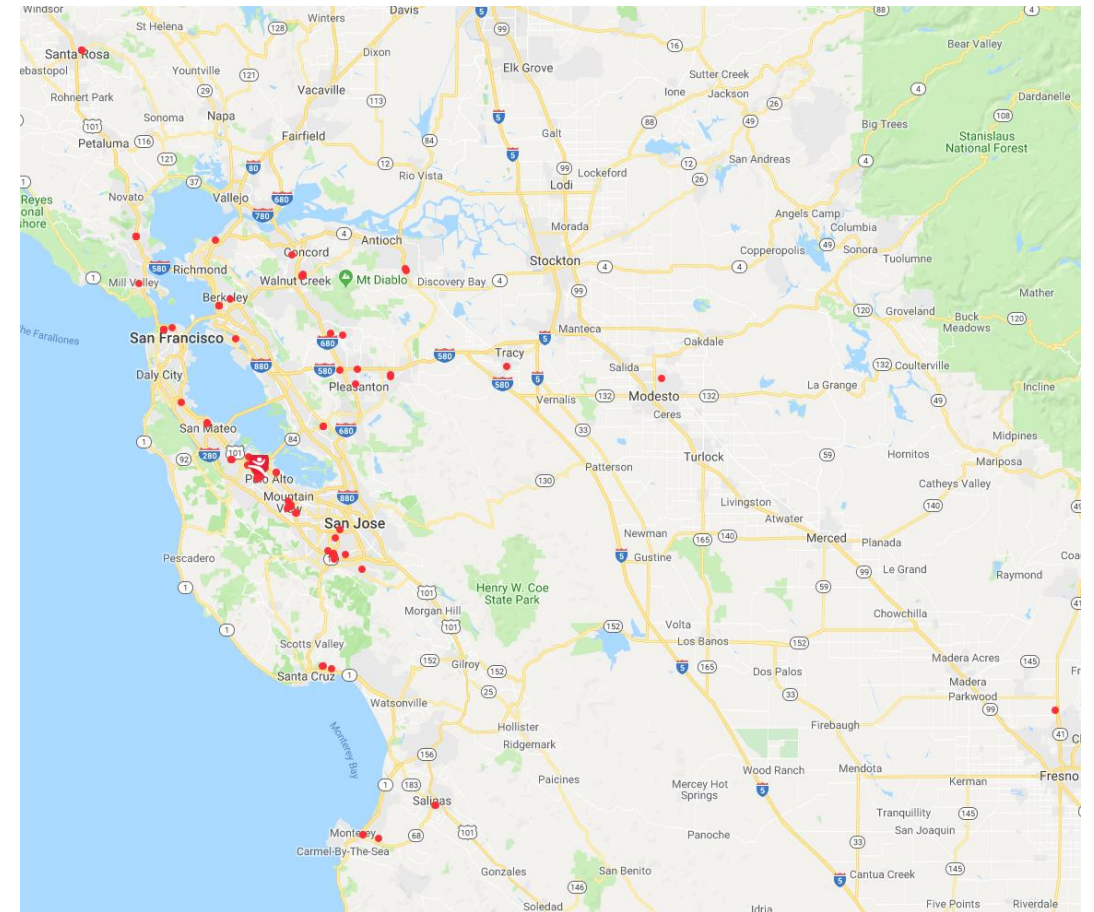
Support **research** projects



Stanford
Children's Health

Lucile Packard
Children's Hospital
Stanford

Enterprise-wide support throughout Northern California

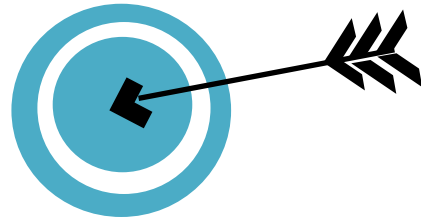


QUICK LOOK

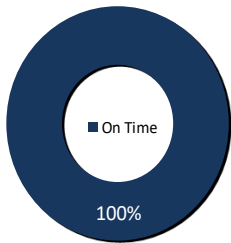
1,300 Total monthly work orders

EFFICIENCY

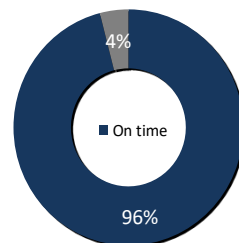
All incidents addressed within 15 minutes of call received



PREVENTIVE MAINTENANCE (PM) COMPLETION



100% on-time high risk PM completion

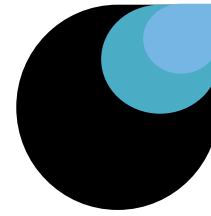


96% on-time non-high risk PM completion



Lucile Packard
Children's Hospital
Stanford

WORK ORDER DETAIL



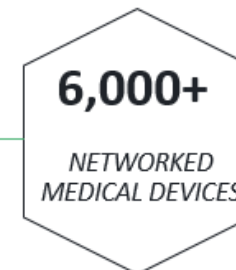
300 monthly incidents
800 preventive maintenance work orders
200 monthly repairs, projects, etc.

REGULATORY

100%
Regulated Environment

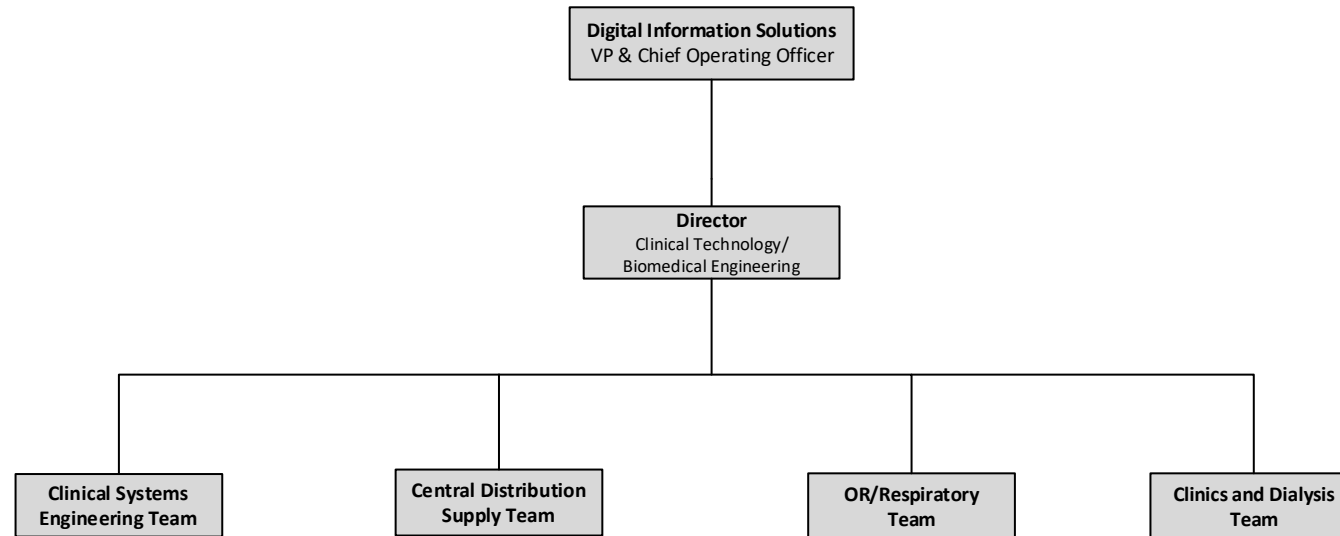
THE JOINT COMMISSION
FDA
CENTERS FOR MEDICARE AND
MEDICAID (CMS)

DEVICE INVENTORY



Stanford Medicine Children's Health HTM/CE reporting Structure

Clinical Technology and Biomedical Engineering



Ilir Kullolli, Stanford Medicine Children's Health

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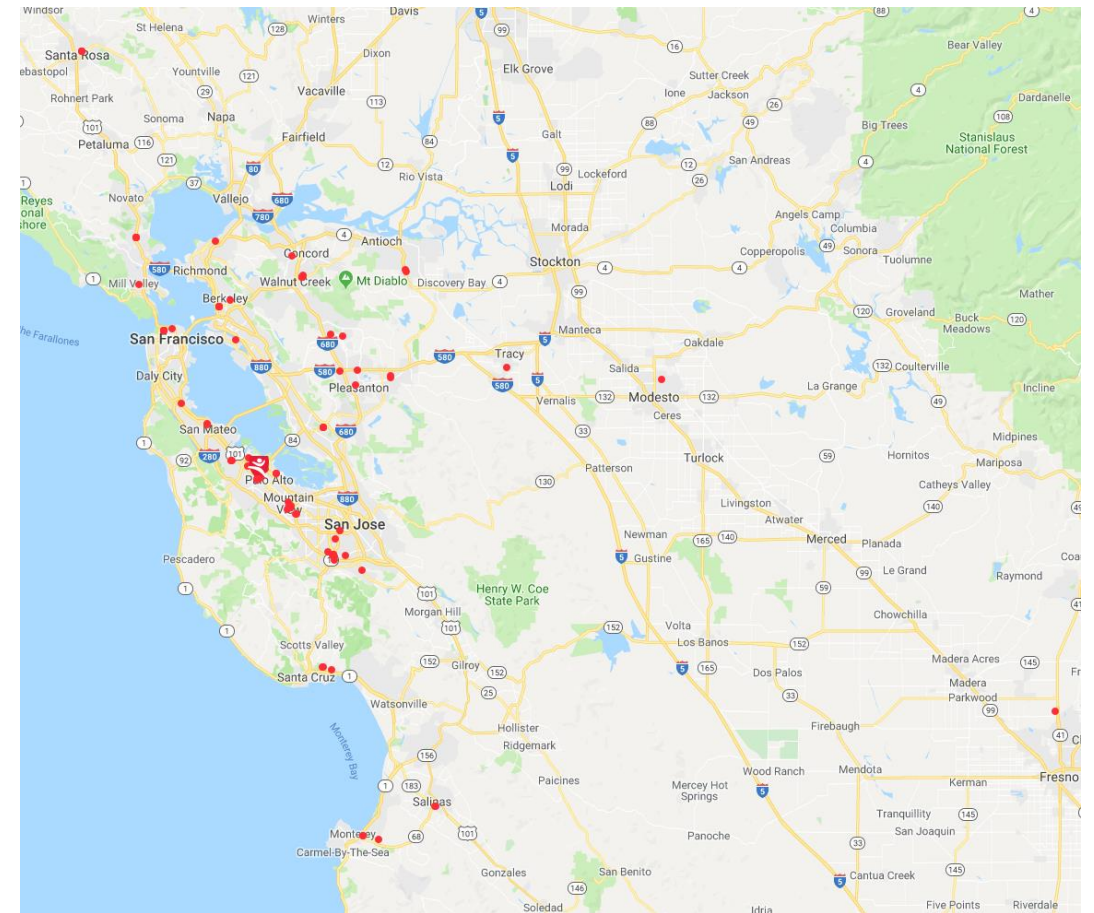
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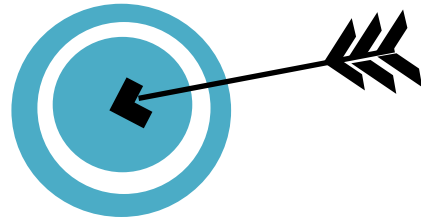


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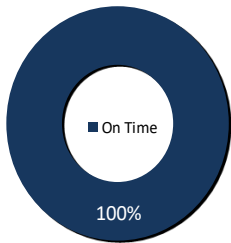
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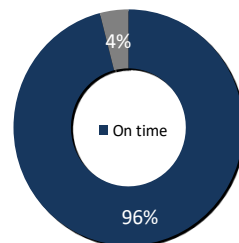
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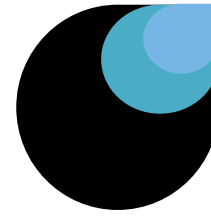


96% on-time non-high risk PM completion



Lucile Packard Children's Hospital
Stanford

WORK ORDER DETAIL



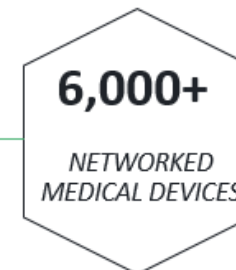
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Regulated Environment

THE JOINT COMMISSION
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DEVICE INVENTORY



About the Speaker



Perry Kirwan

Executive Director, MEng.



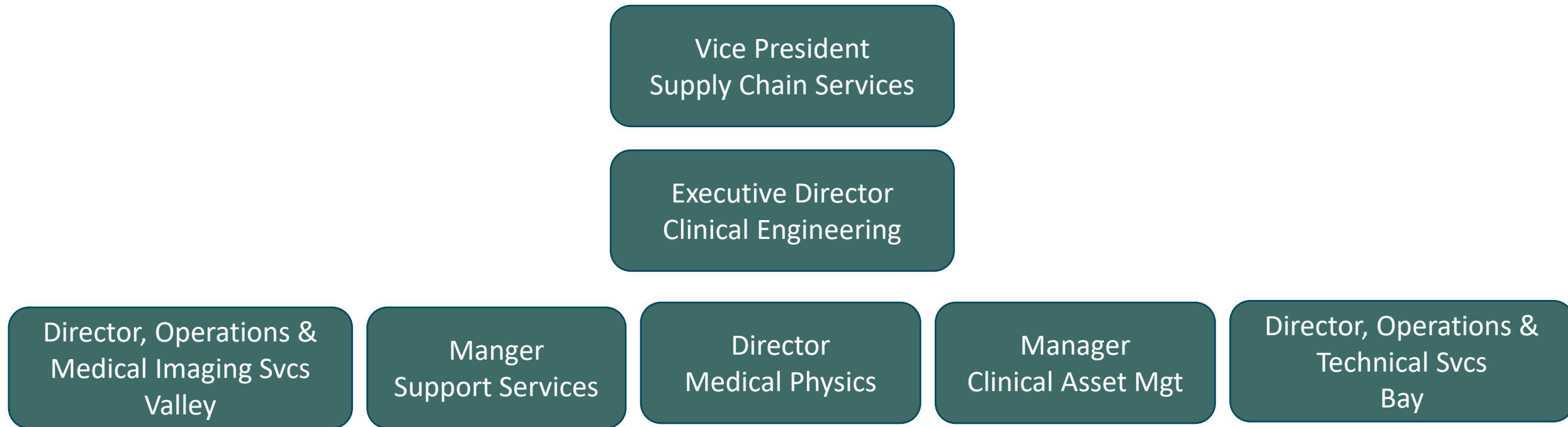
Perry Kirwan is currently the Executive Director at Sutter Health headquartered in Sacramento, CA. Sutter has 24 acute care facilities and well over 600 off-site locations that include outpatient imaging centers, ambulatory surgery centers, urgent care facilities, clinics and physician practices. The program supports over 150,000 assets in inventory.

Prior to Sutter Health, Perry was Vice President of Technology Management/ENTECH for Banner Health. He held several other leadership roles there over 30 years building new programmatic capabilities in capital planning/procurement, medical physics, asset management, service delivery/quality management, equipment standardization/new technology assessment, medical device integration, cybersecurity, and virtual reality.

He holds a BS in Cellular & Molecular Biology and BSE and MSE in Biomedical Engineering from Arizona State University and has published and lectured extensively over the years in topics of Healthcare Technology Management.

Sutter Health HTM/CE reporting Structure

Clinical Engineering (aka eQuip)



Network Hospitals

- Sutter Coast Hospital (Crescent City)
- Sutter Lakeside Hospital (Lakeport)
- Sutter Santa Rosa Regional Hospital
- Novato Community Hospital (southern Sonoma County)
- Sutter Delta Medical Center (Antioch)
- Sutter Amador Hospital (Jackson)
- Alta Bates Summit Medical Center (Berkeley and Oakland)
- Eden Medical Center (Castro Valley)
- California Pacific Medical Center (San Francisco)
- Mills-Peninsula Medical Center (Burlingame and San Mateo)
- Sutter Maternity & Surgery Center of Santa Cruz
- Sutter Solano Medical Center (Vallejo)
- Sutter Davis Hospital
- Sutter Medical Center Sacramento
- Sutter Roseville Medical Center
- Sutter Auburn Faith Hospital
- Sutter Tracy Community Hospital
- Memorial Medical Center Modesto



Our network includes access to 28 hospitals, more than 8,000 doctors and clinicians, same-day care, urgent care and more across the greater Sacramento, Central Valley and Bay Area communities.

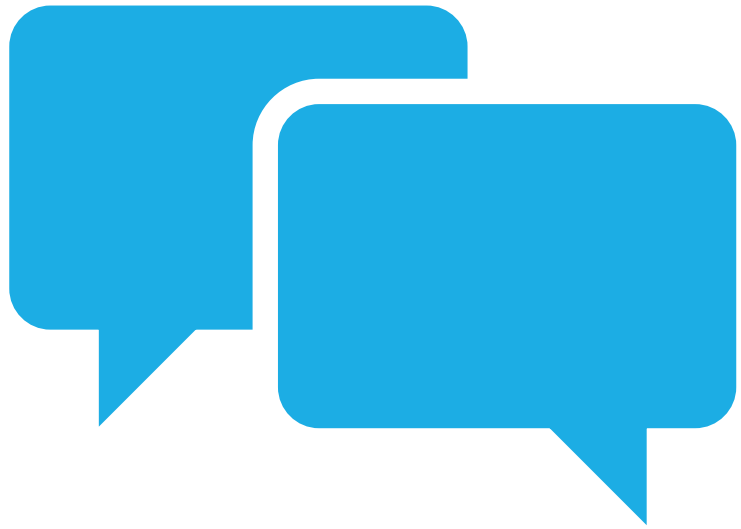
Sutter Facts at a Glance

-  **\$7.6 Billion** - Invested for expansion
-  **\$899 Million** – Community Benefit
-  **433 Partnerships** - Community partners
-  **People**
 - 12,000 Physicians
 - 2,000 Advanced Practice Clinicians
 - 15,000+ Nurses
 - 57,000+ Employees
-  **Patients** - Nearly 3.5 million
-  **Award-winning Locations**
 - 28 Hospitals
 - 56 Ambulatory Surgery Centers
 - 55+ Clinics, Imaging, and Home Care Services

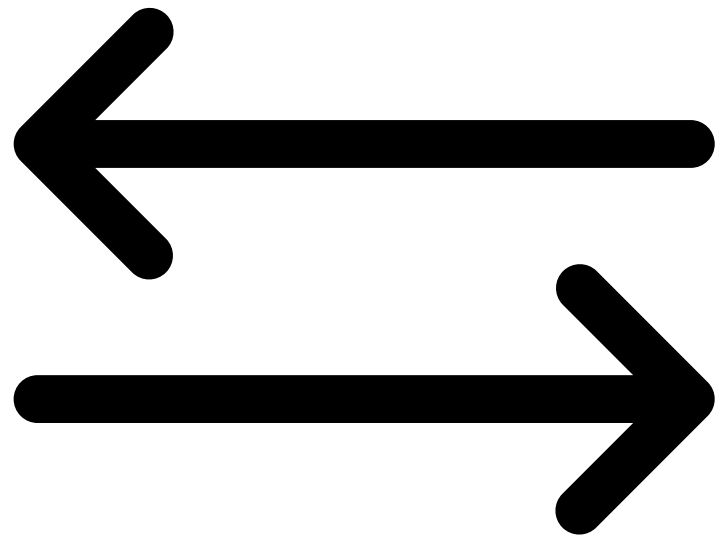
eEquip Team Key Metrics

10/2023 – 10/2024

Equipment Supported	167,598
Dispatch Service Requests Received	31,655
Field Service Reports (FSRs)	147,365
Field Service Report Hours	213,927
Preventive Maintenance (PM) Work Orders	126,312
Preventive Maintenance Hours	102,650
Total Count Service Events	273,677
Total Hours of Documented Work	316,577



Panel discussion



How has this reporting structure evolved over the past few years?



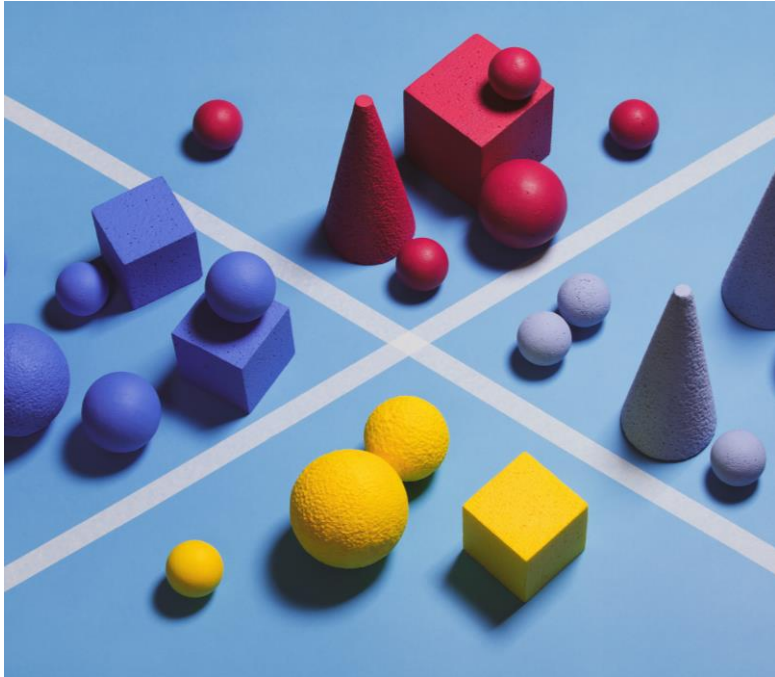
What are the advantages and disadvantages of these different structures?



Has the structure improved communication and escalations between departments



How does the structure support upward mobility and career progression?



What should be improved or changed in the HTM/CE reporting structure moving forward?



What would you like to add about your organization?

Thank You

Any question?

Please type your questions to the Zoom Q&A window

Please complete the online evaluation form at
https://www.surveymonkey.com/r/ACCE_session4

