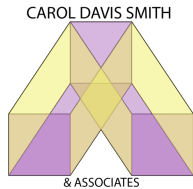


# Excellence by Design

Carol Davis-Smith, MS CCE



# Excellence Isn't Accidental It's Intentional

CAROL DAVIS-SMITH, MS CCE

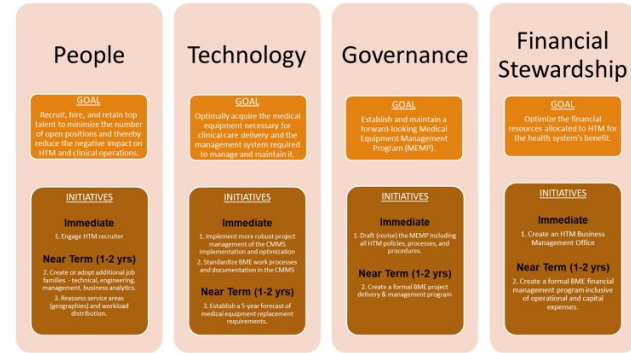
PRESIDENT  
CAROL DAVIS-SMITH & ASSOCIATES, LLC



## VISION

HTM will deliver the right technology, at the right location and right time with the right support to ensure optimal clinical outcomes.

enables safe patient care through medical technologies, operational efficiencies, and value.



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# Roadmap ... to HTM Excellence!

# Strategic Goals

What happens if these goals are not achieved?

## VISION

HTM will deliver the right technology, at the right location and right time with the right support to ensure the right clinical outcomes.

## MISSION

HTM enables safe patient care through medical technologies, operational excellence, and value.

### People

#### GOAL

Recruit, hire, and retain top talent to minimize the number of open positions and thereby reduce the negative impact on HTM and clinical operations.

#### INITIATIVES

##### Immediate

1. Engage HTM recruiter

##### Near Term (1-2 yrs)

2. Create or adopt additional job families - Technical, engineering, management, business analytics.
3. Reassess service areas (geographies) and workload distribution.

### Technology

#### GOAL

Optimally acquire the medical equipment necessary for clinical care delivery and the management system required to manage and maintain it.

#### INITIATIVES

##### Immediate

1. Implement more robust project management of the CMMS implementation and optimization
2. Standardize BME work processes and documentation in the CMMS

##### Near Term (1-2 yrs)

3. Establish a 5-year forecast of medical equipment replacement requirements.

### Governance

#### GOAL

Establish and maintain a forward-looking Medical Equipment Management Program (MEMP).

#### INITIATIVES

##### Immediate

1. Draft (revise) the MEMP including all HTM policies, processes, and procedures.

##### Near Term (1-2 yrs)

2. Create a formal BME project delivery & management program

### Financial Stewardship

#### GOAL

Optimize the financial resources allocated to HTM for the health system's benefit.

#### INITIATIVES

##### Immediate

1. Create an HTM Business Management Office

##### Near Term (1-2 yrs)

2. Create a formal BME financial management program inclusive of operational and capital expenses.

# Metrics and Key Performance Indicators

## OPERATIONAL METRICS

Budget Compliance	Parts Inventory Management
Connected Environment	Planned Maintenance
Corrective Maintenance	Service Ratio Mix
Inventory Count	Staffing Ratio
Inventory Value	Staffing Level

## STRATEGIC METRICS

Cost of Service Ratio  
Mean Time Between Failure\*

## Using Metrics and KPIs

Optimal performance of the HTM Program requires a clearly defined set of operational and strategic **metrics that are tracked consistently over time**.

**Operational** metrics will enable the HTM Program to monitor its own performance while **Strategic** metrics will indicate the HTM Program's contribution to enterprise missions.

One of, if not the most, important component of a metric is its **definition**. All too often, metrics are cited with the assumption that everyone understands it in the same way. Unfortunately, that is rarely the case and often the reason benchmarking fails to deliver the anticipated benefits.

**The data required** for the operational and strategic metrics is typically found in the HTM computerized maintenance management system (CMMS), the Supply Chain Management (SCM) enterprise resource planning (ERP) system, the IT service management system, and the enterprise financial reports.

# Which metrics? What KPIs?

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**It depends.**

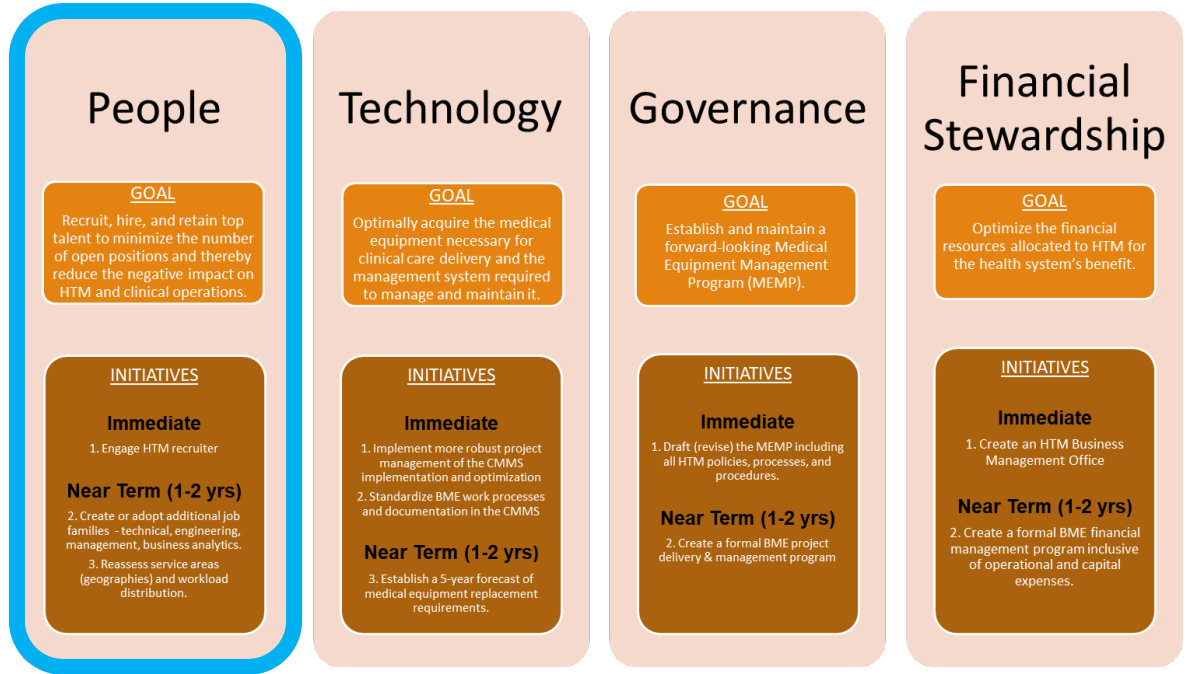
**What question are you trying to answer?**

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# People

## GOAL

Recruit, hire, and retain top talent to minimize the number of open positions and thereby reduce the negative impact on HTM and clinical operations.

## INITIATIVES

1. Engage HTM recruiter



UConn | UNIVERSITY OF CONNECTICUT

COLLEGE OF ENGINEERING

Biomedical Engineering Program

## Data

1. Specific positions to be recruited
2. Fully loaded cost of positions to be recruited
3. Cost of recruiter services

[U.S. Bureau of Labor Statistics \(bls.gov\)](https://www.bls.gov)

[Title 38 Pay Schedules - Office of the Chief Human Capital Officer \(OCHCO\) \(va.gov\)](https://www.va.gov)

CE/HTM salary surveys

$$\text{“Cost of Staff Ratio”} = \frac{\text{Total Recruitment Costs}}{\text{Total Compensation}}$$

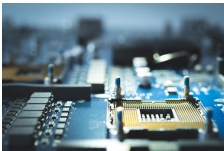
# People

## GOAL

Recruit, hire, and retain top talent to minimize the number of open positions and thereby reduce the negative impact on HTM and clinical operations.

## INITIATIVES

1. Engage HTM recruiter
2. Create or adopt additional job families – technical, engineering, management, business analytics.



## Data

1. Specific positions to be created and/or adopted
2. Fully loaded Cost of positions to be created and/or adopted
3. Labor budget impact

Maintenance **or** Non-Maintenance Technical Management **or** Non-Management Administrative  
**Workload Justification – hours, not counts**

PM Hours per Year (avg)  
+ CM Hours per Year (avg)

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Maintenance Workload

Project Hours per Year (avg)  
+ Data Analytics Hours per Year (avg)

---

Non-Maintenance Hours



# People

## GOAL

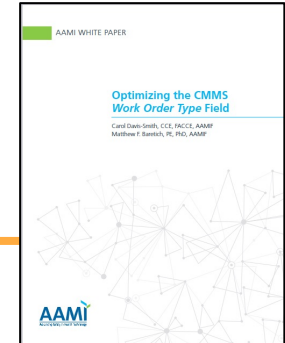
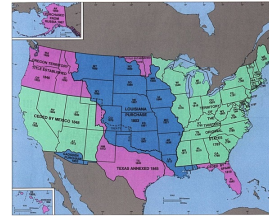
Recruit, hire, and retain top talent to minimize the number of open positions and thereby reduce the negative impact on HTM and clinical operations.

## INITIATIVES

1. Engage HTM recruiter
2. Create or adopt additional job families – technical, engineering, management, business analytics.
3. Reassess service areas (geographies) and workload distribution.

## Data

1. PM hours by service area
2. CM hours by service area
3. Average productive hours by service area



PM Hours by equipment type  
CM Hours by equipment type

TOTAL Hours

Documented Hours

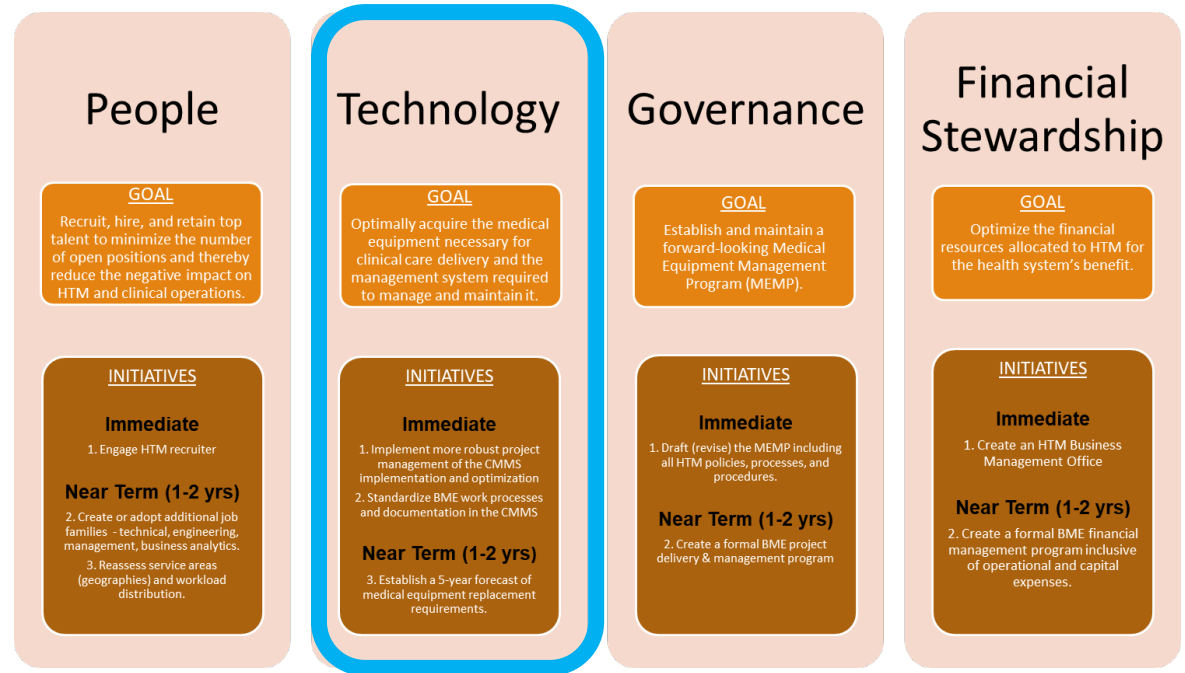
Paid Hours – worked regular, worked OT, PTO

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# Technology

## GOAL

Optimally acquire the medical equipment necessary for clinical care delivery and the management system required to manage and maintain it.

## INITIATIVES

1. Implement more robust project management of the CMMS implementation and optimization



## Data

1. Policies, process, and procedures
  - Data
  - Project Management
2. CMMS requirements and specifications

[Computerized Maintenance Management Systems for HTM](#)

[Optimizing the CMMS Work Order Type Field](#)

[Optimizing the CMMS Failure Code Field](#)

Company	CMMS
Accruent	Connectiv, TMS, EAM
EQ2	HEMS
MediMizer	MediMizer
Nuvolo	Nuvolo
Phoenix Data Systems	AIMS
TMA Systems	WebTMA

# Technology

## GOAL

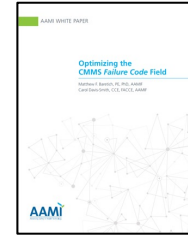
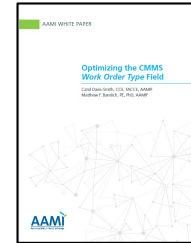
Optimally acquire the medical equipment necessary for clinical care delivery and the management system required to manage and maintain it.

## INITIATIVES

1. Implement more robust project management of the CMMS implementation and optimization
2. Standardize BME work processes and documentation in the CMMS

## Data

1. Policies, process, and procedures
  1. Scheduled Maintenance (PM)
  2. Corrective Maintenance (CM)



% Compliance with Data Standards

# Technology

## GOAL

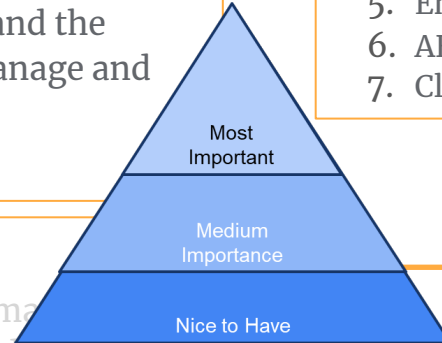
Optimally acquire the medical equipment necessary for clinical care delivery and the management system required to manage and maintain it.

## Data

1. Manufacturer, Model, Serial#
2. Equipment Category and Type
3. Manufacture, Purchase, and/or Installation Dates
4. End of Manufacture/Sale (EOM)
5. End of Support (EOS)
6. AHA Depreciation Schedule
7. Clinical Utilization

## INITIATIVES

1. Implement more robust project management of the CMMS implementation and optimization
2. Standardize BME work processes and documentation in the CMMS
3. Establish a 5-year forecast of medical equipment replacement requirements.



Technical Score = EOM + EOS

Financial Score = Years Beyond AHA Useful Life

Clinical Score = Rare, Low, Average, Excessive

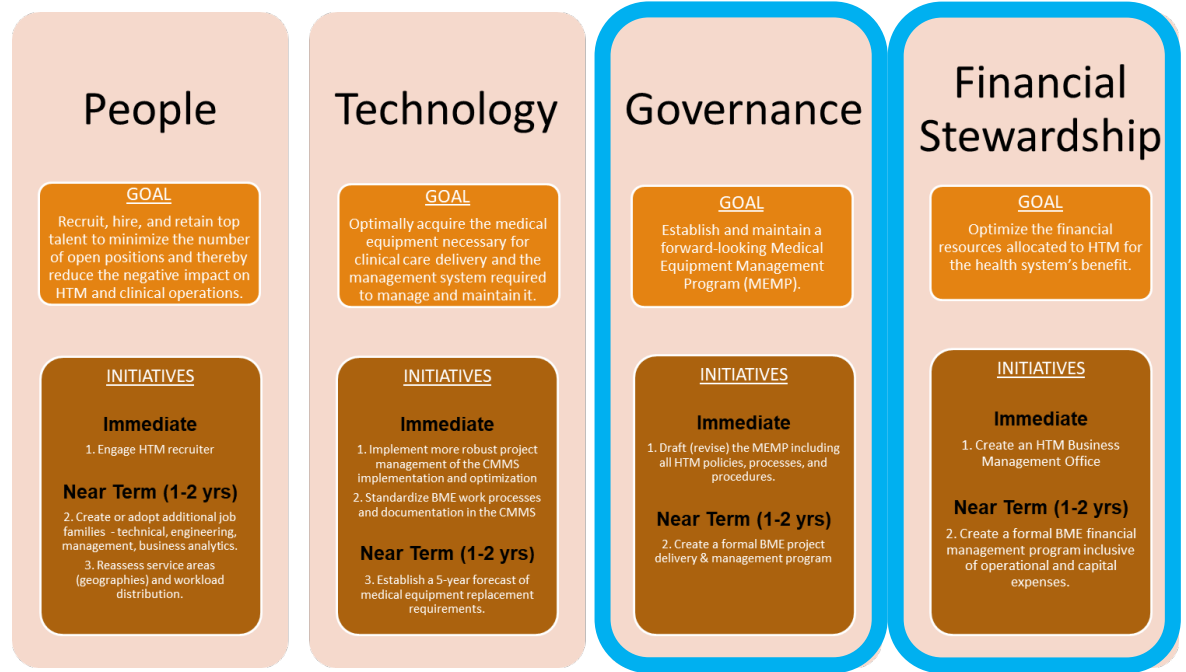
Total Score = Technical + Financial + Clinical

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**Thank You!**



# Enjoy the conference!



Home Strategic Technology Planning Medical Device Acquisition Healthcare Technology Management Contact



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(602) 821-4092

## Services

Carol Davis-Smith & Associates, LLC provides a consultative bridge between the technical, clinical, and strategic healthcare perspectives.



*Carol Davis-Smith is a proven leader in the development and maintenance of safe, reliable, cost effective, and efficient patient care delivery systems through technology and process management.*

Discovering the Possibilities