Don’t Let Medical Equipment End of Life be the End of You

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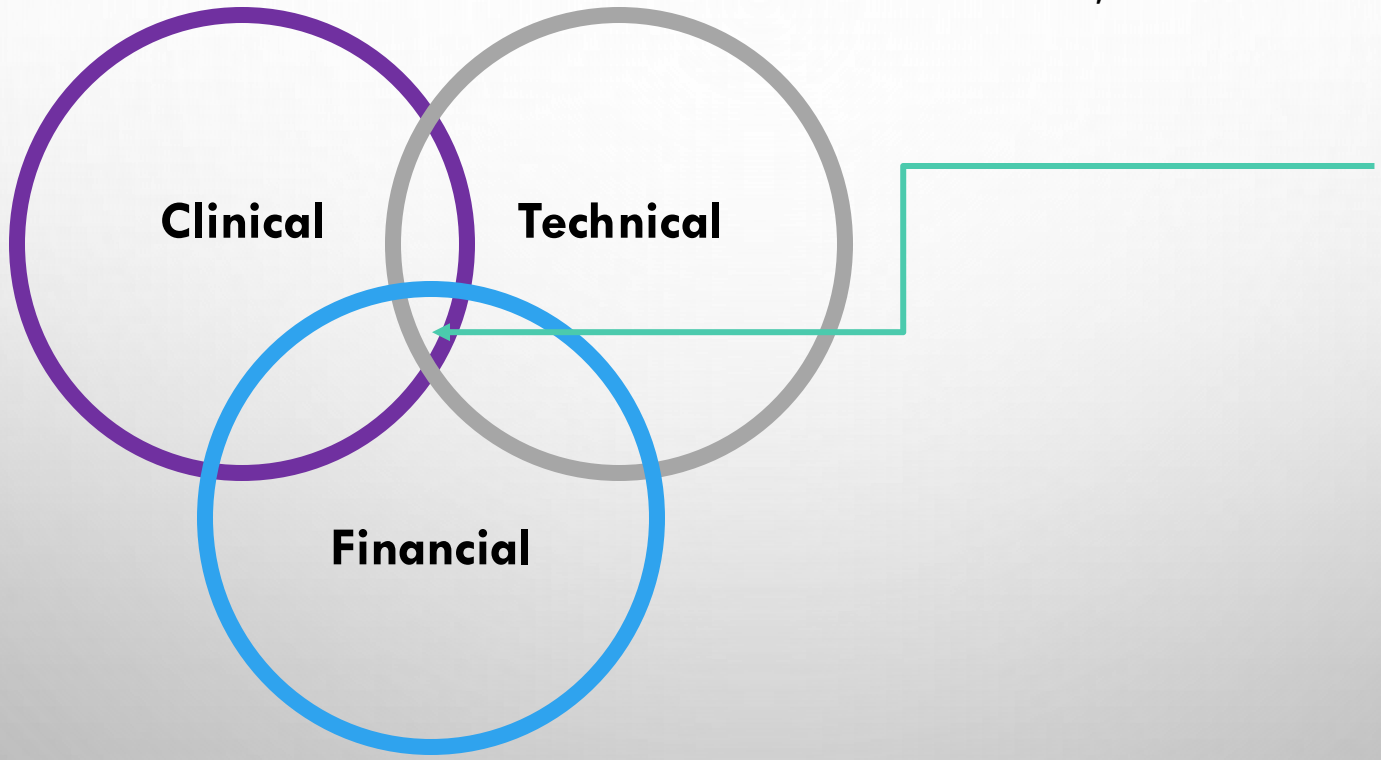
MD EXPO


HOW DO YOU RESPOND WHEN SOMEONE ASKS …
Is this device end of life?

IT DEPENDS …

What is their perspective?
What question are they really asking?


Clinical
Technical
Financial
Optimized balance between Clinical, Technical, & Financial considerations

Technical

Most familiar to HTM

Product is still manufactured and sold

Product is no longer manufactured or sold

EOM

Product is no longer manufactured, sold, or serviced

EOS

In-house HTM capabilities

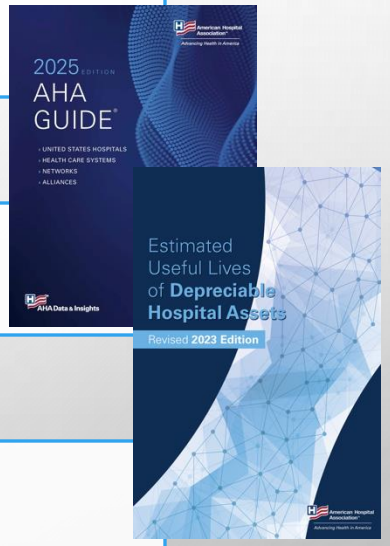
Financial

Most familiar to Finance

Asset is zero years beyond the AHA useful life

Asset is less than five years beyond the AHA useful life

Asset is greater than or equal to five years beyond the AHA useful life



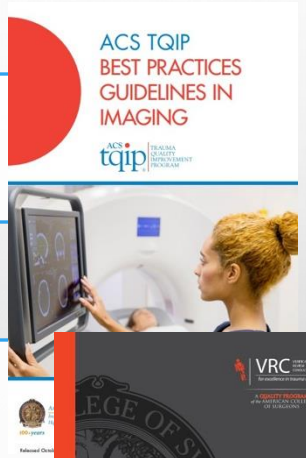
Clinical

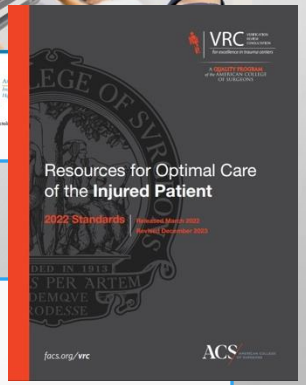
Most familiar to Clinicians

Device/System meets all clinical standards of care and protocol requirements

Device/System does not meet some clinical standards of care and/or protocol requirements

Device/System is insufficient relative to standards of care and clinical protocols





Clinical

Utilization … a surrogate or indicator of clinical end of life

- Device/System is rarely used
- Device/System has low to average utilization
- Device/System has high volume utilization
- Device/System has excessive utilization


WHY IS THIS IMPORTANT?

Medical Equipment Aging: Part II—Impact on Lifespan

Wang, Rui, Skinner, Ayers-Comegys, Gibson, Williams
Journal of Clinical Engineering (2024)

- Analysis of the disposal pattern of 342,000 pieces of equipment over a period of 30+ years show age is not the primary determinant for replacement or disposal.
- Most equipment is deployed well past the depreciation period and the end-of-life or end-of-support dates declared by their manufacturers, without significant negative impacts on patient care.
- Life expectancies estimated from the disposal data are typically double of American Hospital Association's estimated useful lives.

BRITISH COLUMBIA

BC Biomedical Engineering

Collaboration of HTM programs across British Columbia
200,000 active medical devices

- New policy: Modifications of Medical Devices
- Compliance with EGBC[1] Professional Practice Management Plan
- Compliance with CMBES[2] Clinical Engineering Standards of Practice
- Decision tree for applicability (with examples, including 3D printing)
- Provision for formal risk assessment by clinical engineering (P.Eng.)

ENGINEERS & GEOSCIENTISTS BRITISH COLUMBIA

The Canadian Medical and Biological Engineering Society
CMBES/SCGB

[1] Engineers & Geoscientists BC (professional licensing authority)

[2] Canadian Medical and Biological Engineering Society

Appendix A – Is it a modification?

- Would the alteration have an effect on the risk profile of the device?
- Would the alteration change the operation/functionality of the device?
- Would the alteration change the intended use of the device?

If yes to any, formal risk assessment and documentation is required.

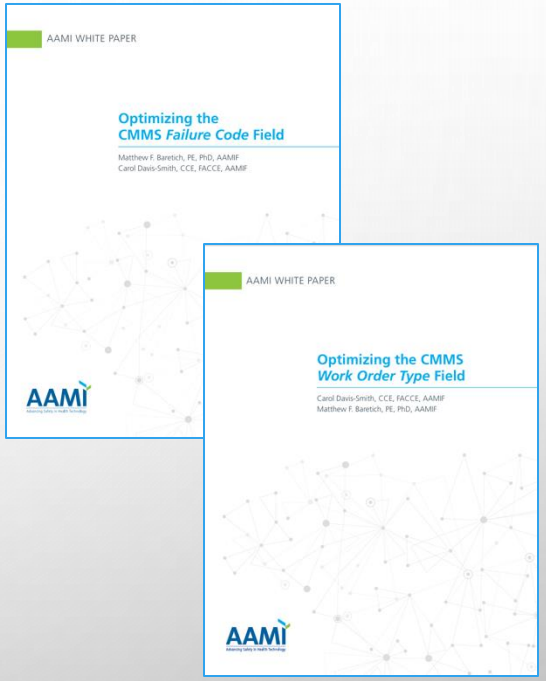
BRITISH COLUMBIA

BC Biomedical Engineering

New CMMS for British Columbia

Go-live (late 2025) objectives:

- Usability for frontline biomedical engineering technologies
- Analytics for actionable management information
- Province-wide standardization on best practices
  - AAMI White Paper: Optimizing the CMMS Failure Code Field
  - AAMI White Paper: PM Compliance and Definitions Guide



BC Biomedical Engineering

New CMMS for British Columbia

Follow-on projects:

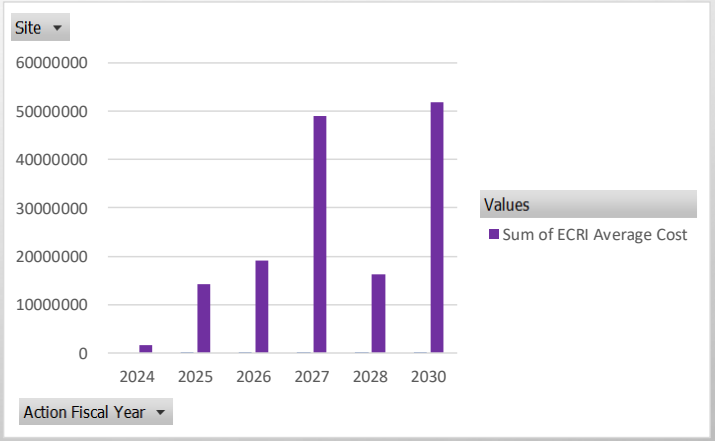
- Integration: Supply Chain and Purchasing systems
- Integration: Recall and safety alert management systems
- Integration: Incident investigation management system
- Integration: Service contract management system
- Analytics for equipment replacement planning, starting with enhanced “End of Life” metrics

REPLACEMENT FORECASTING

Site	(All)

Action Fiscal Year	Count of Asset Tag	Sum of ECRI Average Cost
2024	14	$ 1,536,489
2025	96	$ 14,289,915
2026	38	$ 19,078,060
2027	234	$ 48,975,301
2028	129	$ 16,290,547
2030	704	$ 51,938,622
Grand Total	**1215**	**$ 152,108,934**

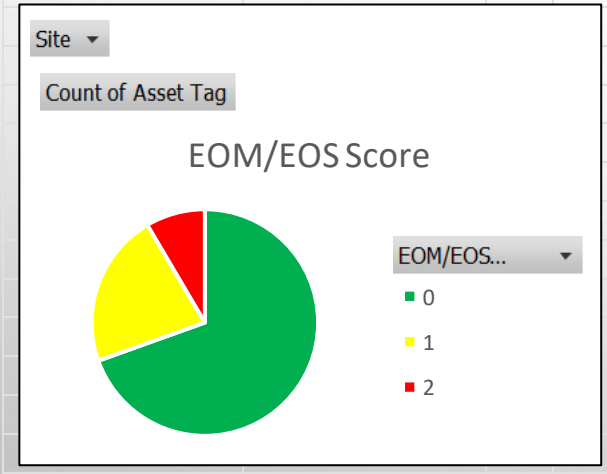
Total Score	
GREEN (1-3)	Indicates a low probability for replacement within the next five (5) years
YELLOW (4-6)	Indicates the probability for replacement with 3-5 years
RED (7+)	Indications a high prbability for replacement within 1-2 years



Site	(All)

EOM/EOS Score	Count of Asset Tag
0	844
1	267
2	103
Grand Total	**1214**

0	Product is still manufactured, sold, and serviced
1	Product is no longer manufactured or sold
2	Product is no longer manufactured, sold, or serviced



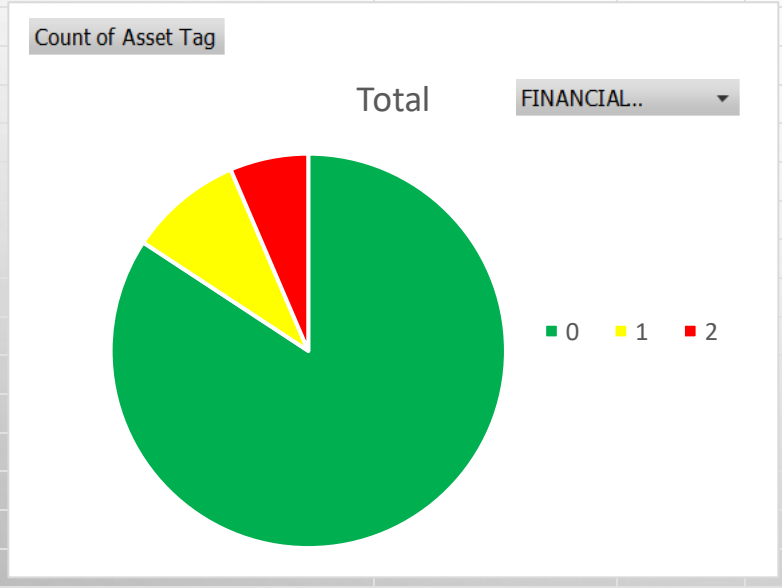
CAUTION

The green segment is over estimated due to missing end-of-manufacture and/or end-of-service data

20%

Financial Depreciation Status	Count of Asset Tag
0	1023
1	113
2	78
Grand Total	**1214**

0	Zero (0) Years Beyond AHA Useful Life
1	Less than Five (5) Years Beyond AHA Useful Life
2	Greater than or equal to Five (5) Years Beyond AHA Useful Life



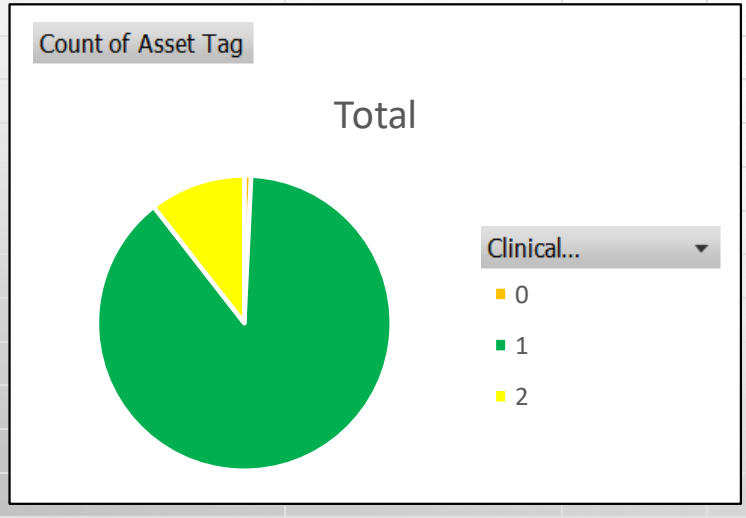
CAUTION

The green segment is over estimated due to inaccuracy of Installed Date

Date Entered into the CMMS

Clinical Utilization	Count of Asset Tag
0	9
1	1077
2	128
Grand Total	**1214**

0	Rarely or never utilized
1	Average to low utilization
2	High volume utilization
3	Excessive utilization



Why rarely or excessively utilized?

REPLACEMENT FORECASTING

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+

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+

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Total Score

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Thank You!

Enjoy the Conference!

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MD EXPO

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