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Coronary artery disease is a leading cause of death in the world. A substantial amount of effort is spent preventing, diagnosing and treating this disease, with treatments including a variety of drugs and surgeries.

Common sense suggests an effective treatment for a restricted artery would be to expand the artery and support it with a tube to prevent further blockage. The tube is medicated with the same drugs taken orally that also help to prevent restricted blood flow.

The procedure, called "angioplasty and coronary stent implantation" is expensive, but nevertheless proved to be a popular choice made by patients and physicians for the preventive treatment of stable, long-term heart disease.

There was only one problem with this common sense preventive solution: it is inefficient.

The evidence says stents are no better than the cheaper and safer option of medication alone. The evidence in this case consisted of properly collected and analyzed data on groups of patients who underwent the two treatments. The process by which medical decisions are based on the best available research is called *evidence-based medicine* and is considered the gold standard in modern medical practice.

What does this have to do with asset management? Common sense and expert judgment play a role in maintenance and replacement decisions, but the underlying assumptions should be tested with data that has been properly collected and analyzed. We call this process *Evidence-Based Asset Management*

, or EBAM.

Four key asset management decision areas are:

1. Preventive maintenance strategies;
2. Inspection decisions;
3. Capital equipment replacement decisions;
4. Resource requirements.

The value of EBAM to each decision area is easy to see. Consider preventive maintenance. A reliability engineer communicated to me the case of a piece of equipment whose components were being preventively replaced according to manufacturer recommendations. The engineer kept careful records of component lifetimes and failure causes. He concluded:

"I found that the hazard rates obtained were decreasing…due to poor quality components and questionable maintenance practices. Overhaul on these components has been suspended… Quality issues are also being addressed."

The asset management decision was based on the best available evidence.

Consider the following capital equipment replacement decision. A fleet operator I met from a large marine cargo handling firm in the U.S. with approximately 2400 pieces of powered lift equipment. He said:

"We have no corporate strategy on equipment repair/replacement, lease/buy, economic service life, etc. These decisions are based often on strength of personalities and number of mechanics' complaints, not objective analysis… On the plus side, we do have a CMMS and 4 years of 'pretty good' equipment information and cost history."

Conclusion: the available data should be used to implement an EBAM approach.

I feel very fortunate to be linked with the blue-chip organizations that support the Centre for Maintenance Optimization and Reliability Engineering (C-MORE). They have made it their goal to adopt EBAM, from training right through to the support for development of evidence-based decision-making software tools. I encourage all organizations to do the same. **MT**

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The opinions expressed in this Viewpoint section are those of the author, and don't necessarily reflect those of the staff and management of MAINTENANCE TECHNOLOGY magazine.