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AAMI News November 2015

AAMI Kicks Off 'Reliability-Centered Maintenance' Project for HTM Field

AAMI is set to begin exploring whether an approach known as reliability-centered maintenance, or RCM, is a feasible strategy that could be adopted on a wide scale throughout the field of healthcare technology management (HTM). After longtime clinical engineer Malcolm Ridgway approached AAMI with the idea, AAMI enlisted the guidance of HTM consultant Ken Maddock to help explore the possibilities.

"In the 1950s, the civil aviation industry pioneered a means of maintaining aircraft based upon analyzing the exact nature of the failures that actually occur, then focusing their maintenance activities on areas where they would be truly beneficial," Ridgway said. "They called this method reliability-centered maintenance. Other high-reliability industries quickly followed suit, and during the latter part of the last century, military aviation, the entire aerospace industry, the nuclear submarine industry, and the nuclear power industry, among others, all adopted the RCM approach. HTM is the only high-reliability industry that has not yet adopted these very effective and highly efficient practices."

For this to become a reality in the HTM world, Ridgway said that a scientifically solid, but simple-to-understand and credible, RCM-based method must be developed for determining which specific types of medical devices can truly be made safer through periodic scheduled maintenance. He added that time spent "performing inefficient and ineffective maintenance" should instead be spent on activities that truly improve patient safety.

Maddock stressed that the approach must be "clear, specific, and achievable" and must meet regulatory guidelines. With some exceptions, the Centers for Medicare & Medicaid Services (CMS) allows a hospital to "adjust its maintenance, inspection, and testing frequency and activities for facility and medical equipment from what is recommended by the manufacturer, based on a risk-based assessment by qualified personnel."

CMS further notes that "hospitals electing to adjust facility or medical equipment maintenance must develop policies and procedures and maintain documentation supporting their alternate equipment management (AEM) program" and that "they must adhere strictly to the AEM activities and/or frequencies they establish."

As a result, a scientifically sound RCM approach could presumably fit within the allowances on equipment maintenance offered by CMS.

Maddock has proposed establishing a task force "to review materials in terms of their

practicality and ability to be implemented across different business units." The task force would also "help the plan to gain momentum and credibility."

Individuals with questions or suggestions related to the RCM project should contact Patrick Bernat, AAMI's director of HTM, at pbernat@aami.org.

About RCM

The goal of RCM is to determine the most critical functions and then optimize maintenance strategies to minimize system failures, ultimately increasing equipment reliability and availability. There are seven basic questions used during RCM to help identify the causes of system failures and develop activities designed to prevent them.

1. What are the functions and associated performance standards of each asset?
2. How can each asset fail to fulfill its functions?
3. What is the cause of each functional failure?
4. What happens when each failure occurs?
5. What are the consequences of each failure?
6. What can and/or should be done to predict or prevent each failure?
7. What should be done if a suitable proactive task cannot be found?