

ENERGY TO CARE *SUCCESS STORY*

University of Maryland Medical Center:
ASHE Energy to Care Treasure Hunt
Reveals \$2 Million of Energy Savings
Opportunities

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University of Maryland Medical Center

Floorspace: 2.5 million square feet

Beds: 806

Total employees: 8,600

Maintenance staff employees: 42

Annual utilities expenses: \$14.2 million

In July 2019, ASHE hosted a two-day Energy to Care Treasure Hunt at the University of Maryland Medical Center (UMMC) in Baltimore. UMMC is the academic medical center of the 13-hospital University of Maryland Medical System. The initial UMMC structure was built in 1937, and six additions from 1957 to 2013 have brought the facility's floorspace to 2.5 million square feet.

Richie Stever, CHFM, CLSS-HC, UMMC's director of operations and maintenance, did not have specific outcomes in mind for the treasure hunt. He saw the treasure hunt as a way to help UMMC reach its goal of reducing energy consumption by 20 percent by 2022 as part of the Better Buildings Challenge through the U.S. Department of Energy (DOE).

However, Stever knew that the treasure hunt would bring together participants with a mix of skills and knowledge and that this collective expertise would prove invaluable in surveying the UMMC facility. And, he was right: the treasure hunt resulted in the identification of over \$2 million of no-cost and low-cost energy savings opportunities.

A great deal of planning and preparation happened before the treasure hunt event. ASHE staff and faculty analyzed detailed energy use, infrastructure, and facility data and information to determine past energy performance and inventory the facility. This analysis provided baseline metrics for the facility and allowed for the development of tools, such as an energy calculator, that would let the treasure hunt teams make fast and accurate estimates on-site at UMMC.

UMMC treasure hunt participants came from a variety of fields, sectors and positions, both within and outside of health care. During the event, the teams needed to be ready to identify energy savings issues, use the energy audit equipment, collect and analyze data, and assess findings to make recommendations. In the weeks leading up to the UMMC treasure hunt, ASHE faculty prepared participants through a series of webinars about the ASHE Energy to Care Treasure Hunt program, energy fundamentals and treasure hunt logistics.

At UMMC, the treasure hunt kicked off with a review of goals, procedures and processes. Five teams then set out to search through the mechanical, clinical and public spaces of the UMMC facility. Over two half-day sessions, the teams looked closely at every part of the facility to identify a range of energy-related issues. They also took relevant measurements, made energy savings calculations and worked together to assess their long lists of potential opportunities and to prioritize projects.

The teams outlined their findings and recommendations in final presentations to the other treasure hunt participants and to UMMC’s staff and leadership. They found a slew of no-cost opportunities, with potential annual savings totaling more than half a million dollars.

No-Cost Opportunities	Annual Savings Potential
Repair air leaks on air compressors	\$5,000
Raise temperatures in mechanical and electrical rooms	\$257,300
Put computers and monitors in sleep mode when not in use	\$120,000
Adjust the building temperature for the seasons	\$104,000
Remove mini refrigerators from office spaces	\$11,942
Adjust HVAC equipment schedules	\$40,000
Adjust air terminal unit settings	\$913
Repair leaking faucets	\$13,170
Total	\$552,325

For projects that would require capital funds, Stever worked with UMMC’s chief financial officer to further refine the list of priority projects.

Priority Projects	Annual Savings Potential	Equivalent Patient Revenue	Patient Days
Repair Weinberg humidifier steam leaks	\$154,000	\$14,221,900	2.73
Conduct steam trap audit and repairs	\$100,000	\$9,235,000	1.77
Repair leakage of atrium dampers	\$145,000	\$13,390,750	2.57
Remove storage room lights	\$87,430	\$8,074,161	1.55
Install additional LED lights	\$245,000	\$22,625,750	4.35
Reset chilled water temperature	\$300,000	\$27,705,000	5.32
Total	\$1,031,430	\$95,252,561	18.29

Stever then went on to present these priority projects to UMMC’s capital planning committee. The committee ultimately approved \$400,000 of funds to complete the Weinberg humidifier, steam trap, atrium damper, and storage room light projects. Stever believes that engaging UMMC’s leadership from the start and conveying the benefits through financial metrics such as equivalent patient revenue and patient days were essential in ensuring that these projects moved forward.

While treasure hunts provide clear cost savings for organizations, the UMMC treasure hunt illustrates how the benefits extend well beyond the events themselves. The UMMC treasure hunt brought together representatives from a number of organizations working to improve sustainability in health care facilities. In particular, this event bolstered partnerships between ASHE, the DOE's Better Buildings Alliance and the ENERGY STAR commercial buildings program at the U.S. Environmental Protection Agency (EPA).

Treasure hunts are also a valuable way for facilities staff to connect and engage with different departments within their organizations. Cara Cook, MS, RN, AHN-BC, climate and health program manager at the Alliance of Nurses for Healthy Environments, is also a nurse, and she was the only direct care provider who participated in the UMMC treasure hunt. "As a clinician, you're so involved with patient care and you don't see how you can have an impact on sustainability initiatives," Cook says. "The treasure hunt was a great way to learn about a different side of the operations process."

Kara Brooks, MS, LEED AP BD+C, ASHE's sustainability program manager, agrees that treasure hunts such as the one at UMMC give staff throughout health care facilities important new insights and perspectives. "The awareness that treasure hunts bring about is very impactful," Brooks says. "Someone might see something a thousand times and not ever have thought about it, but then they see the impact that just shutting down a monitor or turning off the lights in a conference room might have."

By engaging and training employees and helping them recognize the important role they can play, treasure hunts offer significant long-term benefits. "Most non-engineering hospital staff have never been asked to save energy, much less to report on energy saving opportunities in their workspace," says Clark Reed, ENERGY STAR's national program manager and a participant of the UMMC treasure hunt. "But treasure hunts get everyone in an organization thinking about energy efficiency."

While UMMC benefited greatly from the findings of the treasure hunt, Stever says the broader goal is to encourage energy savings efforts in facilities far and wide. "ASHE's whole approach for the treasure hunts is to train the trainer," Stever says. "We hope the attendees from the UMMC event will take this information and their newfound knowledge back to their facilities to perform their own treasure hunts."

The Energy to Care Program encourages hospitals across the country to reduce their energy consumption. This free program offers four product lines which include the Energy to Care Dashboard, educational materials, the Energy to Care Treasure Hunt and a robust awards program. ASHE congratulates hospitals throughout the country for their energy consumption reduction efforts.



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