

Tennessee Pollution Prevention Partnership Success Story



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Safe and Effective Water Conservation

The Member

James H. Quillen VA Medical Center is a tertiary care facility providing a full range of patient care services, with state-of-the-art technology as well as education and research. Comprehensive health care is provided through primary care, tertiary care, and long-term care. In addition to providing acute care, the James H. Quillen VA Medical Center offers geriatric and rehabilitation services through its 120-bed Community Living Center (Nursing Home) and a 348-bed Domiciliary that offers a variety of treatment options, including Homeless Outreach and inpatient treatment. The Medical Center has an active affiliation with the James H. Quillen College of Medicine which is co-located on the facility's campus and the campus of East Tennessee State University. Over 300 University residents, interns, and students are trained at the James H. Quillen VA Medical Center each year. Additionally, university affiliations with our medical center include nursing, dentistry, pharmacy, social work, and psychology.

The Story

The James H. Quillen VA Medical Center has been challenged by Executive Order 13423 to achieve a 16% reduction in overall (individual buildings are not metered) water consumption. One reduction method considered was the use of aerators on faucets. The proposed use of such fixtures in a hospital setting raises concerns regarding infection control, which have historically prohibited the utilization of aerators for water conservation. Faucet aerators have been found to provide a surface for *Legionella pneumophila* to colonize, therefore creating a reservoir for the organism in hospital plumbing. In a population comprised of immunocompromised patients this is a significant concern.

The Success

In May 2009, the Medical Center installed Saniguard Silver Ion antimicrobial aerators to all faucets within the patient care areas of our Community Living Center, 120 faucets in all. This

alteration converted the faucet's water output from 2.2 gallons per minute (gpm) to 1.5 gpm. The addition of aerators not only conserves water, but also provides an added benefit to our infection control program. The silver used in the aerators attacks the cell wall of bacteria, which prevents growth by interrupting cell metabolism. The Medical Center purchased 120 aerators and adapters to complete this project, which totaled \$819.66. The annual estimated water savings are \$1965.60, therefore this project had paid for itself within approximately 5 months.



The Pollution Prevented

Each Silver Ion antimicrobial aerator will save the Medical Center an estimated 1,638 gallons of water annually. The calculated savings are based on the assumption that each sink is used for 1 minute 9 times a day 260 days a year and the addition of the aerators decreases the water output by 0.7 gpm. Therefore, the addition of 120 of these aerators in the Medical Center's Community Living Center will provide an estimated annual water savings of 196,560 gallons. Through this project the Medical Center is not only saving potable water on campus, but we are also saving the energy required to treat almost 200,000 gallons of water annually by eliminating its introduction into the sewage system. With the additional infection control aspect this project is not only a benefit to the environment, but to our patients as well.

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