strains of multidrug-resistant organisms.

With increasing frequency, hospitals are turning to automated tools to monitor areas like cleaning thoroughness, hand-hygiene compliance and terminal room cleaning and disinfection. For example, Health Facilities Management’s 2015 Sustainability Survey found that one in four responding hospitals reported using UV light disinfection in some part of their facilities.

Yet, while many studies have documented the ability of UV light disinfection to kill antibiotic-resistant bacteria in hospitals, comprehensive independent studies across multiple facilities over time to document whether these systems reduce HAIs have been almost nonexistent, primarily due to lack of funding.

In October, however, the Duke University School of Medicine released partial results of what is believed to be the largest and most comprehensive independent study of UV disinfection technology in hospitals to date. The CDC-funded study found that using a combination of traditional cleaning chemicals (including quaternary ammonium and bleach) and UV light to clean patient rooms cut transmission of C. difficile, MRSA, VRE and Acinetobacter by 10 to 30 percent among patients who stayed in a room previously occupied by someone with a known positive culture or infection of a drug-resistant organism. This group of patients represented about 5 percent of more than 600,000 patients across the nine study hospitals in the Southeast.

Underscoring the significance of the highly controlled study, Deverick J. Anderson, M.D., an infectious disease specialist at Duke Medicine, noted when the findings were released: “Several groups have demonstrated that enhanced cleaning strategies, such as using portable UV machines, can kill these germs, but this is the first well-controlled study that shows these techniques can make a meaningful difference in patient outcomes.”

Cliff McDonald, M.D., senior adviser for science and integrity at the CDC’s division of health care quality promotion, cautions that the types of disease transmission points examined in this study represent perhaps 5 to 10 percent of all HAI transmission events nationally. Still, he says, the data indicate that using UV light to disinfect rooms is more effective than traditional cleaning methods and products alone. Another key point is that the facilities in the study consistently demonstrated success rates of 90 percent in hand-hygiene compliance and surface cleaning — rates few hospitals achieve consistently. Thus, even with high success rates in hand washing and traditional cleaning and disinfection methods, UV light helped to achieve higher disinfection levels.

Jim Davis, R.N., CIC, senior infection prevention analyst at ECRI Institute, says the Duke study will add clarity to what can be a confusing issue for hospitals. He says that while research demonstrates how technology can aid in surface disinfection, the results only can be achieved with consistently meticulous attention to manual cleaning processes.

“We have to caution people that they can’t let their regular cleaning practices lapse and rely on [technology] to catch what they’re missing. There has to be a coordinated process,” Davis says.

Katherine Velez, Ph.D., a scientist at Clorox Healthcare, which offers two UV disinfection light systems for disinfecting environmental surfaces, says research like that funded by the CDC and a recent Clorox-funded study at Penn Medicine’s Perelman School of Medicine showing that UV light cut C. difficile transmissions by 25 percent on cancer patient floors, help to demonstrate the technology’s value. She, too, adds that the technology is but one part of a comprehensive and multilevel approach to combating antibiotic-resistant bacteria. HFM