



Germ-zapping robots help clean rooms at Napa's Queen of the Valley

The short silver cans with a domed top being wheeled around the floors of the Queen of the Valley Medical Center may look like droids from a “Star Wars” movie, but this is no sci-fi fantasy.

They are germ-zapping robots, and they help destroy deadly pathogens, including multi-drug-resistant organisms that can make patients or workers sick.

The two robots, made by a company called Xenex Disinfection Services of San Antonio, use ultraviolet (UV) light to quickly destroy harmful bacteria, viruses, fungi and bacterial spores in hard-to-clean places.

Named Snoopex and QVR2 by hospital employees, the portable disinfection system is effective against pathogens, including *Clostridium difficile* (C. diff), norovirus, influenza, Ebola and methicillin-resistant *Staphylococcus aureus*, better known as MRSA.

The robots, which cost an estimated \$100,000 each, are being used to disinfect surgical rooms, the ER, patient rooms and bathrooms and other areas.

“We are excited to use the Xenex system to help us achieve our goal of zero infections,” said Larry Coomes, chief executive. “This investment is important and underscores our commitment to patient care and the communities we serve.”

The disinfection system works by pulsing xenon, an inert gas, at a high intensity in a xenon ultraviolet “flashlamp.” It’s hundreds of times stronger than sunlight, according to Xenex.

This produces intense ultraviolet C (UVC) light which penetrates the cell walls of microorganisms, including bacteria, viruses, mold, fungus and spores.

Their DNA is fused, rendering them unable to reproduce or mutate, effectively killing them on surfaces without contact or chemicals.

Here’s how the robot works.

The device is wheeled into a patient room, bathroom or other space that needs to be cleaned. Patient rooms are never cleaned when the patient is in the room.

Employees stay out of the room during use because the bright light has the potential to irritate human eyes. It is safe to watch through a glass window, though. Once the door is closed, the top of the machine then rises, exposing a xenon light bulb.

Once turned on, a very bright light fills the room and starts killing germs and bugs. It makes minimal noise.

The Xenex robot cleaning can cover 7 feet in every direction, creating a 14-foot sanitary bubble.

During cleanings, the robot is moved around the room so the light reaches all surfaces. The disinfection process takes from five to 25 minutes, depending on how big the room is or how many times the robot needs to be moved within that space.

The term “UV light” might make some think of tanning beds. However, the light emitted in a tanning bed is UV-B.

The Xenex robot produces UV-C light, which doesn’t occur naturally on earth (it’s blocked by our ozone layer), according to the manufacturer. As a result, germs and bacteria have no resistance to the robot’s UV-C light.

Before Snoopex and QVR2 were on the job at Queen of the Valley, rooms and areas were cleaned the tried and true way, using microfiber cloths and hydrogen peroxide based cleanser.

Those methods are certainly still used, said Kevin Herring, director of environmental services, facilities and engineering.

“We haven’t changed any of the other cleaning processes” already in place. The robot cleaning “is a supplement to what we already do,” he said. “It’s an extra layer.”

“This is just another way we can be proactive and ensure the safety of patients and our staff,” he said.

According to a news release, the Xenex robot has been tested and proven using independent lab verification and has been credited by health care facilities across the U.S. for helping them reduce their infection rates significantly.

Queen of the Valley began using the Xenex robot early in 2016. By the second half of 2016, the Xenex cleaning program was fully in place.

Infections can have a direct effect on the bottom line of the hospital. Over the past three years, the federal government penalized the Queen because of various hospital-acquired conditions, including having a higher rate of C. Diff, which can cause diarrhea, fever and abdominal cramps.

However, from July 2016 to December 2016, the Queen decreased rates of C. Diff by 47.3 percent, when compared to the same period in 2015. Using the Xenex robots – and other processes and tools — helped bring down that rate, according to the hospital.

More than 300 community hospitals, Veterans Affairs and DoD facilities in the U.S., Canada, Africa and Europe are using Xenex robots, which are also in use in skilled nursing facilities, ambulatory surgery centers and long-term acute care facilities, said the news release.

According to the manufacturer, hospitals often calculate the incremental cost of various types of hospital-acquired infections to be from \$3,000 to \$5,000, all the way to \$20,000 to \$30,000.

Compared to the cost of one robot, the hospital needs only to avoid a handful of infections to recoup the investment, said the manufacturer.

According to Xenex, the closest other hospital to the Queen using the Xenex machine is Sonoma Valley Hospital.

All Kaiser Permanente hospitals in Northern California have been using ultraviolet light as a supplement to manual cleaning practices for three years, said a Kaiser spokeswoman.

St. Helena hospital does not use a Xenex or a similar machine at this time, said spokeswoman Jill Kinney.

“We do, however, continuously review infection prevention-related products and cleaning processes based in evidence-based research,” Kinney wrote in an email.

Source: http://napavalleyregister.com/news/local/germ-zapping-robots-help-clean-rooms-at-napa-s-queen/article_4d8ea280-96cb-5f13-9237-97245c23bed6.html

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