



## Germ-zapping robot Gigi sets its sights on Ebola

ORANGE, California (CNN) — Gigi the robot looks like a skinny, harmless cousin of R2-D2, but the machine is a cold-blooded killer for hire, a germ zapper that could become an important weapon in the fight against Ebola.

After being wheeled into patient rooms at St. Joseph Hospital, humans clear out, and Gigi begins popping and blasting ultraviolet light that's 25,000 times more powerful than sunlight in killing contagion.

More effective than using cleansing bleach by hand, the UV light touches and cleans all surfaces, including under the bed or between folds on curtains. After five or 10 minutes, the germs' DNA are so badly damaged that they can't replicate and they die.

Girly name aside, the robot is an efficient killer.

"We can clean and disinfect a room (by hand) to an 85% level, but when we use the ultraviolet light we can clean that room to 99.9%," said Dr. Ray Casciari, a pulmonary disease specialist at the hospital. "This is the future of hospitals because 85% is not enough."

### **Two robots at Dallas hospital**

Priced at \$104,000 each, the robot is one futuristic answer to help kill an Ebola virus that made U.S. history in September when it was diagnosed for the first time on American soil, according to its manufacturer, Xenex Disinfection Services of San Antonio, Texas.

In fact, that first U.S. Ebola patient, Thomas Eric Duncan, eventually died in the same Dallas, Texas, hospital where two Xenex robots are now in use, said Mark Stibich, the firm's co-founder and chief scientific officer. Duncan was a Liberian national visiting Dallas.

Nina Pham and Amber Vinson, nurses who cared for Duncan at Texas Health Presbyterian Hospital, have since been infected with Ebola and are now receiving treatment.

The robot wasn't used during the direct care of Duncan, but it was later used in cleanup of the patient's treatment area, which helped keep Ebola from spreading within the hospital and helped make it a safer workplace, Stibich said.

Texas Health Presbyterian Hospital officials couldn't be immediately reached for comment Thursday.

### **Interest in disinfection rises**

A sterile hospital is no small matter for patients and health care professionals.

“They’re here 24-7. Their exposure to all this is really very intense,” Casciari said. “When we use the machine, the nurses feel a little bit better about the room and the doctors feel a little bit better about the room.”

The Ebola cases in the United States and the virus’ unprecedented outbreak in West Africa have brought new attention to disinfection and its technologies, including the robots, Xenex says. Such interest was evident in Thursday’s congressional hearings into the U.S. government’s domestic response to Ebola.

“We’ve definitely had an increase in interest in our technology. Ebola has generated a lot of interest in the threat of infectious disease — and what can be done to stop the spread of deadly infections,” said Xenex spokeswoman Melinda Hart.

### **Fighting hospital infections**

Ultraviolet light has been used for decades for air and water disinfection, but the Xenex robot uses environmentally friendly xenon light instead of bulbs with mercury, which is toxic, Hart said. Xenex says it’s the only firm that uses xenon in its robots, which also allows for faster disinfection. A xenon robot can clean a room in a matter of minutes, whereas robots that uses mercury-vapor lamp need at least an hour to warm up and carry out their disinfection, Hart said.

The importance of disinfection in the wake of the Ebola cases has also brought attention to the general problem of hospital-associated infections, such as *Clostridium difficile* (C. diff.) and Methicillin-resistant *Staphylococcus aureus* (MRSA), Hart said.

On any given day, one in 25 U.S. patients has at least one infection contracted during their hospital visit, the Centers for Disease Control and Prevention says. That totaled 722,000 infections in 2011. Moreover, hundreds of Americans with such infections die every day, the CDC says.

“Although there has been some progress, today and every day, more than 200 Americans with health care-associated infections will die during their hospital stay,” CDC Director Tom Frieden said in a statement last March.

Thirty of Xenex’s customers using the robots have reported a decrease in those hospital-associated infections, according to research that the firm publishes on its website. A handful of those medical centers report reductions of C. diff., MRSA and other hospital-associated infections by a range of 20% to 53%, the firm said.

### **Some hospitals slow to adopt**

So far, 250 hospitals in the United States use the Xenex robots, the firm says. The facilities often name their robots, as St. Joseph Hospital did.

When asked why more hospitals weren’t using the technology, Hart said that “it was only a couple of years ago that hospitals began understanding the role of the environment in the spread of infections.” “Some hospitals are innovative and adopted the technology immediately, while others have been much slower to adopt,” Hart said.

The company’s technology was featured by CNN Money in 2012, when a CDC official said he saw little downside to the venture as long as the technology is cost effective.

“It already has an advantage in the marketplace because it doesn’t require doctors or nurses to change their behavior or do more,” said Ramanan Laxminarayan, director of the Center for Disease Dynamics, Economics & Policy in Washington D.C.

So far, however, the firm hasn’t sent any robots to West Africa, which is experiencing the deadliest outbreak of Ebola on record, Hart said.

The company is now in discussions with the U.S. Department of Defense and relief organization to determine how to deploy the robots and ensure training that the machines are used properly, Hart said.

The firm is also trying to sell its robots to airlines, especially in the wake of how nurse Vinson flew halfway across the country on a Frontier Airlines flight with 132 people the day before she went to a hospital with Ebola symptoms.

“We’re talking to several major airlines right now about how we could go in and disinfect their planes — to protect the airline employees as well as customers,” Hart said.

October 16th 2014

Source: <http://wqad.com/2014/10/16/germ-zapping-robot-gigi-sets-its-sights-on-ebola/>