



Robotics: Germ-Zappers Are Saving Lives

A hospital is no place to be... especially if you're sick.

According to the World Health Organization (WHO), health care-associated infections (HAI) — infections acquired in healthcare settings that can lead to sepsis and/or death — “are the most frequent adverse event in health care delivery worldwide.”

Seven out of every 100 patients hospitalized in developed countries and 10 out of 100 hospitalized in developing countries will be diagnosed with at least one HAI.

That's hundreds of millions of people getting sick — or even dying — because they sought medical treatment. And it costs healthcare providers a lot of money.

Remember [“superbugs”](#) — bacteria resistant to antibiotics? One in four HAI is caused by antibiotic-resistant bacteria.

That's the next front in the war on HAI, according to a recent report from the Centers for Disease Control and Prevention (CDC).

The good news is there's one robot capable of fighting the HAI war and the increasingly critical antimicrobial resistance battle.

Meet the world's only full-spectrum ultraviolet germ-zapping robot — the creation of Xenex Disinfection Services.

Indeed, it does look just like something out of the Star Wars franchise.

The Xenex robot is now used in more than 300 hospitals in the United States, deployed to clean up isolation rooms, operating rooms, general patient care rooms, contact precaution areas, emergency departments, bathrooms, and even public spaces.

On March 9, 2016, Xenex introduced the LightStrike, a new product that kills six antibiotic-resistant bacteria identified by the CDC as “urgent or serious threats to health.”

These include carbapenem-resistant Enterobacteriaceae (CRE); methicillin-resistant Staphylococcus aureus (MRSA); ESBL-producing Enterobacteriaceae (extended-spectrum β -lactamases); vancomycin-resistant Enterococcus (VRE); multidrug-resistant Pseudomonas aeruginosa; and multidrug-resistant Acinetobacter.

Xenex was founded by epidemiologists Dr. Julie Stachowiak and Dr. Mark Stibich in 2008. Venture capitalist Morris Miller provided initial funding for the business, which reincorporated as Xenex Healthcare Services and relocated from Houston to Austin, Texas, in 2009. The first version of its Pulsed Xenon Full Spectrum UV System hit the market in 2010.

A 2011 study led by Stachowiak and Stibich and published by the journal Infection Control & Hospital Epidemiology found “a statistically significant reduction in microbial load and eliminated VRE [vancomycin-resistant Enterococci] on sampled surfaces” treated with the Xenex system.

According to the study, Xenex's system was "20 times more effective at killing dangerous pathogens than traditional housekeeping methods."

Xenex sold its first robot shortly thereafter, in 2012.

A second peer-reviewed study, published by the Journal of Infection Prevention in 2013, found that Cone Health, a not-for-profit network of healthcare system based in Greensboro, North Carolina, saw a 56% reduction in its rate of hospital-acquired MRSA (methicillin-resistant Staphylococcus aureus) infections after it introduced Xenex robots as part of a larger effort to combat HAI.

Subsequent peer-reviewed studies have shown a 56% reduction in hospital-acquired C. diff (Clostridium difficile) and a 70% decrease in ICU C. diff infections, due in part to use of a Xenex robot.

Xenex has raised approximately \$40 million in funding across three rounds subsequent to Miller's initial investment.

A \$25 million round announced in January 2015 included significant interest from overseas investors, a strong sign that Xenex will be able to find markets for its products in Europe and Asia.

As New Scientist reported last week, "The first-ever study of hospital-acquired infections in European hospitals has found that the combined health impact of these infections is twice that of the combined burden of 32 infections caught outside hospitals, including flu, HIV and tuberculosis."

A fresh round of \$3 million in September from Tectonic Ventures should allow the company to expand its sales efforts and to fund new product development, as it continues to penetrate a market defined by the more than 750 hospitals fined for HAI last year.

CDC statistics show that HAI kill about 200 people a day in the United States alone.

Well, Xenex's good robots are about to make hospitals great — well, safe, at least — again.

Source: <http://www.wallstreetdaily.com/2016/10/24/robotics-germ-zappers-saving-lives/>

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