



## UV Light Robot Can Help Stop Spread of Superbugs in Hospital Rooms



According to a new research from the Texas A&M Health Science Center College of Medicine, a robot can clean a hospital room just as well as a person. The study has been published in the *American Journal of Infection Control*.

The research led by Chetan Jinadatha, M.D, M.P.H, assistant professor at the Texas A&M College of Medicine and chief of infectious diseases at the Central Texas Veterans Health Care System in Temple, has studied the effectiveness of a germ-zapping robot to clean hospital rooms. It is believed that this could be the key to prevent the spread of superbugs and could lead to significant financial savings as well as patient lives.

It is important to keep hospital rooms clean in order to prevent the spread of infections. Surfaces in hospitals rooms including bed rails, call buttons, grab bars and tray tables often prove to be reservoirs for bacteria such as MRSA. Infections can be difficult to treat and can sometimes also become fatal. Jinadatha points out that a typical 100-bed hospital sees approximately 10-20 hospital acquired infections a year. The goal of this research is to bring the rate of these infections down to zero.

The need to curtail hospital-acquired infections will be even more important now because beginning in 2017, the Federal Government plans to reduce Medicare payments to hospitals that exceed infections of certain conditions such as hospital-acquired infections.

Currently, the method of cleaning in hospitals is mainly through housekeeping staff, who often have a very high turnover rate. Jinadatha studied the effectiveness of a pulsed xenon ultraviolet light system that was developed in Texas and was introduced in 2011. The device bears a striking resemblance to the fictional robot in Star Wars known as R2-D2. The robot-like system has a saucer-shaped head on top of a column that rises up and reveals a bulb filled with xenon gas. As the machine is switched on, high-voltage electricity passes through this bulb and releases a UV light that binds to the DNA of organisms and kills them.

Jinadatha had published another study last year that compared the effectiveness of manual disinfection alone to manual disinfection plus the use of UV light. He found that manual cleaning plus UV light killed more than 90 percent of the bacteria as compared to 70 percent with manual cleaning. More importantly, manual cleaning plus UV light killed 99 percent of the bacteria that causes MRSA.

In this latest study, Jinadatha found that UV light system alone cut the amount of bacteria in the room by about 70 percent in just 12 minutes. This is the same level of effectiveness as manual disinfection. That is why Jinadatha says that he does not recommend that a hospital use the UV light system by itself. Instead, the system should be used as a safety net to kill bacteria that may be missed by traditional cleaning.

The UV light system is being used in 40 VA hospitals across the country and in about 200 private hospitals. However, Jinadatha is confident that it will eventually become standard equipment for all hospitals. "There is no one thing that will take away the problem of hospital-acquired infections, but we are slowly chipping away at it," he says.

Source: Texas A&M University

Image Credit: Texas A&M Health Science Center

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