

Technology in healthcare: disinfecting lightbulb



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Technology in Health Care

Virtual Reality. Artificial Intelligence. Mechanical limbs. This sounds like the making of a Sci-Fi movie, but this is actually just a few of the latest technologies in health care. We are inundated with technology. It's taking over the way we interact with each other and function every day. The health care industry is making great strides in incorporating technology into the world of health care and has benefited greatly from innovative technology.

One technology that I believe will be extremely beneficial to medical facilities and their patients is the disinfecting lightbulb. Hospitals are full of germs and bacteria. These can be harmful to many patients, especially to those who already have a compromised immune system. According to the United States Centre for Disease Control, nearly 1 in every 25 hospital patients contract an infection while in a medical setting and this is responsible for nearly 100, 000 deaths a year.

One company, Indigo-Clean has developed an indigo coloured lightbulb that continuously disinfects the environment and decreases the spread of infection. This light is not harmful to humans and is safe for continuous use in any type of medical setting.

This lightbulb emits a certain frequency of light that kills dangerous bacteria like Methicillin-resistant Staphylococcus aureus (MSRA), C. difficile and Vancomycin-resistant Enterococcus almost instantaneously. The light reflects

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off all surfaces, penetrating harmful micro-organisms. It targets naturally occurring molecules that exist inside bacteria. The bacteria absorbs the light and then a lethal chemical reaction occurs, similar to the effects of bleach, which prevents it from re-populating the space. (<http://www.indigo-clean.com/how-it-works>, n. d.)

Dr. Chetan Jinadatha, chief of infectious diseases at the Central Texan Veterans Health Care System, authored a study showing that combining both manual disinfection and UV light, could effectively kill between 90 and 99 percent of all aerobic bacteria in an average size hospital room. (<http://www.research.va.gov/currents/spring2015/spring2015-6.cfm>)

By creating a much more sterile environment, this technology will improve patients' recovery time and with fewer complications. It will decrease the length of a patient's hospital stay and therefore decrease the cost to the hospital.

Another fascinating technology that is available is the bionic eye. Nano Retina and Second Sight have developed a microchip that can restore sight to people who with little or no remaining functional vision to due to retinal degenerative diseases. This microchip implant will have a tremendous impact on the patients that receive it. It will give patients the freedom to continue their daily activities and gives them more confidence and dignity. It will also cut down on the number of surgeries that are performed trying to correct their vision.

This technology is of personal interest to me. My mom has a retinal degenerative disease. Her diminished eyesight has limited her daily lifestyle.

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She can no longer drive, walk without assistance, read or even peel potatoes. She has undergone a number of surgeries in an attempt to increase her vision, but none have been successful. This technology may be an option for her if she meets all the criteria.

The microchip is implanted just above the retina. The procedure is a minimally invasive surgery that doesn't require a hospital stay. It's done under local anesthetic and the procedure takes less than 1 hour.

The microchip implant converts images captured by a miniature video camera mounted on the accompanying wireless eyeglasses into a series of small electrical pulses. Those pulses are transmitted wirelessly to the implant. The pulses stimulate the retina's remaining cells, resulting in the perception of patterns of light in the brain. The patient then learns to interpret these visual patterns, thereby regaining some visual function. The accompanying wireless eyeglasses communicate with the implant and allow the patient to fine-tune different light setting at a push of a button.

(<http://www.nano-retina.com/>)

(<http://www.secondsight.com/g-the-argus-ii-prosthesis-system-pf-en.html>, n. d.)

Robotic- assisted surgeries are fairly new in Canada. Only a small number of hospitals in Canada are using this technology. It costs approximately 2. 8 million dollars to purchase and \$180, 000 to maintain annually. Each surgery costs roughly \$5, 600. The cost of Robotics is expensive. Over time hospitals are hoping to offset these expensive costs with the money saved from shorter surgeries and hospital stays.

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There are many benefits to using robotics in surgery. It allows the surgeon to perform more precise, more complex and delicate surgeries with minimal invasion. It also gives the surgeon better dexterity and the ability to reach places within the body that previously had not been possible. It also cuts down the amount of time the patient is in surgery and amount the fatigue experienced by the surgeon. Patients have less recovery time and fewer surgical complications. They experience less post-operative pain and shorter stays in the hospital. (<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4081240/>, n. d.)

Technology is continually evolving. Advances in health care technology will continue to make a remarkable impact in the way health care is delivered to patients. These technologies will reduce hospital costs and assist in better education for health care providers. Technology will also increase the level of care patients receive and better treatment options with reduced complications. Patients will live longer and healthier and aren't those the goals the health care industry strives to achieve?

References

<http://www.davincisurgery.com/>. (n. d.).

<http://www.indigo-clean.com/how-it-works> . (n. d.). Retrieved from Indigo Clean.

http://www.medscape.com/viewarticle/466691_4. (n. d.).

<http://www.nano-retina.com/>. (n. d.). Retrieved from Nano Retina.

<http://www.research.va.gov/currents/spring2015/spring2015-6.cfm>. (n. d.).

<https://assignbuster.com/technology-in-healthcare-disinfecting-lightbulb/>

<http://www.secondsight.com/g-the-argus-ii-prosthesis-system-pf-en.html> .

(n. d.). Retrieved from Second Sight.

<http://www.techtimes.com/articles/64048/20150627/indigo-clean-new-light-designed-hospitals-kills-bacteria.htm>. (n. d.). Retrieved from Tech Times.

http://www.upi.com/Health_News/2015/06/26/Bacteria-killing-light-fixture-made-commercially-available/2601435338291/. (n. d.).

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4081240/> . (n. d.).